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Preface

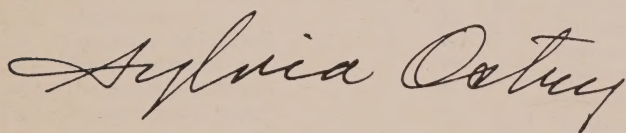
The 1974 edition of the *Canada Year Book* continues the series of annual reviews of social, economic and political developments in Canada. This series began in 1905 but an earlier series was published between 1885 and 1904, based on the original *Year-Book and Almanac of British North America for 1867*.

This edition maintains the basic pattern of the 1973 edition. Important data on family incomes and expenditures form the basis of a new chapter on Incomes and Social Security which emphasizes income support rather than welfare. The Research chapter now incorporates extensive data collected by Statistics Canada on federal expenditures on the natural and human sciences, and covers the full range of activities in these fields conducted by federal and provincial organizations including economic planning agencies. The Energy chapter has been further revised to reflect the latest developments in this important area and the Housing chapter has been re-written to describe recent changes in federal housing programs. Finally, an expanded section on federal-provincial fiscal relations, in the Government Finance chapter, describes in more detail the tax sharing agreements and transfer payments between these levels of government.

New tables and charts of current interest have been added, continuing series brought up to date, and less timely data curtailed or eliminated. The text relates to conditions at the time of preparation while the statistical tables summarize the data available at that time. More recent and more detailed information may be obtained from the sources listed at the end of the text and tables of each chapter.

A popular extension of the *Canada Year Book* program is the reprint service. The *History* chapter of the 1973 edition has not been repeated but may be obtained as a separate publication. *Books about Canada*, the *Chronology* and *Canadian Honours* are reprinted annually. Another reprint for general distribution is the *Demography* chapter — a useful compendium of population, vital statistics and migration data. Other chapters are reprinted occasionally for special audiences. The 1973 edition listed the special articles which appeared in earlier editions and many of these are also available as separate publications.

While the information in this volume was prepared and co-ordinated by Statistics Canada, it would not have been possible to provide such comprehensive data without the co-operation of survey respondents and the enthusiasm of our contributors. Their assistance is gratefully acknowledged.

A handwritten signature in cursive script, reading "Sylvia Ostry". The signature is written in dark ink and is positioned above the printed name and title.

Sylvia Ostry
Chief Statistician of Canada
Ottawa, December 1974

Produced by the Canada Year Book Section,
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Chapter 1

Physiography

1.1 Geography

Canada, occupying the northern half of the North American Continent with the exception of Alaska and Greenland, is the largest country in the Western Hemisphere and the second largest in the world. The lands within its 3,851,809 sq miles of territory are extremely diverse, ranging from the almost semi-tropical areas of the Great Lakes peninsula and the southwest Pacific Coast, wide fertile prairies and great areas of mountains, rocks and lakes to seemingly endless stretches of northern wilderness and arctic tundra. The southernmost point of the country is Middle Island in Lake Erie, at $41^{\circ} 41' \text{N}$. In a straight line 2,875 miles northward, past the treeline and far into the Arctic, is Cape Columbia on Ellesmere Island, Canada's northernmost point, at $83^{\circ} 07' \text{N}$. From east to west at the widest point, the straight-line distance is 3,223 miles — from Cape Spear, Nfld., at $52^{\circ} 37' \text{W}$, to Mount St. Elias, YT, at 141°W .

In position, Canada is situated at the crossroads of contact with the principal powers and some of the most populous areas of the world. In the south, it borders on the United States for a distance of 3,986.8 miles. In the north, the Arctic archipelago penetrates far into the polar basin, making Canada neighbour to northern Europe and the Union of Soviet Socialist Republics. In the east, the salient of Labrador and the island of Newfoundland commands the shortest crossings of the north Atlantic Ocean and links Canada geographically with Britain and France. In the west, the broad arc of land between Vancouver in southern British Columbia and Whitehorse in Yukon Territory provides departure points for crossings of the north Pacific Ocean between continental North America and the Far East. The length of the Yukon—British Columbia border adjoining Alaska is 1,539.8 miles.

In size, Canada's 3,851,809 sq miles may be compared with the area of the USSR at 8,649,539 sq miles, China (including Taiwan) at 3,705,408 sq miles, and Brazil at 3,286,488 sq miles. It is more than 40 times the size of Britain and 18 times the size of France. This immense area, which seems to afford extensive scope for settlement, imposes its own burdens and limitations. Much of the land is mountainous and rocky or is under an arctic climate. The developed portion is probably not more than one third of the total; the occupied farm land is less than 8% and the productive forest land 27% of the total. The population, at approximately 21,569,000 on June 1, 1971, may be compared with 204,800,000 for the United States (1970) and with 95,305,000 for Brazil (1970).

There is no permanent settlement in approximately 89% of the total area of Canada. Only the smallest province, Prince Edward Island, is completely occupied. Large parts of the interior of Nova Scotia, New Brunswick and the Gaspé Peninsula are vacant as is most of the interior of the island of Newfoundland where settlement is confined for the most part to a broken fringe around the coast. On either shore of the St. Lawrence River below Quebec City there is a narrow fringe of settlement, with empty land behind. The continuously settled parts of these maritime areas make up 1.1% of the area of Canada, and contain 11.7% of its population.

About 57.8% of the population of Canada lives in the area between the American border and a 650-mile east-west line from Quebec City to Sault Ste. Marie. Within this area there is continuity of settlement but there are also large unsettled tracts. The block of continuous settlement, whose greatest north-south reach is 270 miles, makes up approximately 2.2% of the area of Canada. The eight largest cities within this block (Montreal, Toronto, Hamilton, Ottawa, London, Windsor, Quebec City, Kitchener) account for 35.8% of the Canadian population.

By far the largest tract of continuous settlement in Canada is in the Prairie Provinces, with a southern margin along the American border of some 900 miles. At its easternmost reach in Manitoba the northern margin of continuous settlement is about 100 miles north of the International Boundary; in the west, the northern margin reaches the 55th parallel, about 400 miles north of the boundary. This settled block occupies about 6.2% of the area of Canada and contains 15.4% of its population. Four cities within the area (Edmonton, Calgary, Winnipeg, Regina) contain 7.3% of the national population. North of this block, the Peace River district, astride the Alberta—British Columbia border, is an agricultural area which reaches the 57th

parallel. This continuously settled area covers about 0.3% of the area of Canada, but contains somewhat less than 0.6% of the country's population.

There is continuity of settlement throughout the southern half of British Columbia, but the continuity is in the form of narrow interconnecting strips following mountain valleys and coastal plains. Between the valleys large areas are empty of permanent settlement. The settled strips occupy about 0.7% of the area of Canada and contain 9.5% of its population. More than 4.0% of the national population is located in the Lower Fraser Valley, principally in the Vancouver metropolitan area.

North of the areas already described there are a number of disjunct settlements, the most notable of which, in regard to size, are in Ontario and Quebec in a band confined by the 47th and 50th parallels. From east to west these are: the Lac St-Jean Lowland some 100 miles north of Quebec City, the Clay Belts astride the Ontario-Quebec border, the Lakehead, and the Dryden and Fort Frances areas in Ontario near the Manitoba boundary. Collectively these blocks of continuous settlement account for about 0.4% of the area of Canada, and approximately 3.6% of its population.

Outside these urban-rural blocks of settlement there are numerous settlements related to mining, forest industries, transportation, administration, defence, hunting, and fishing but with little or no agricultural base. The largest of these isolated settlements, with their 1971 populations, are as follows: Thompson, Man., 19,001; Whitehorse, YT, 11,217; Labrador City and Wabush, Labrador, 11,009; Kenora, Ont., 10,952; Chibougamau, Que., 9,701; Flin Flon, Man. and Sask., 9,344; Fort McMurray, Alta., 6,847; Yellowknife, NWT, 6,122; The Pas, Man., 6,062; Atikokan, Ont., 6,007.

The geographical knowledge of Canada is reasonably complete considering its size and its large areas of difficult access. The whole country has been surveyed and mapped at a scale of 1:250,000, which is very close to four miles to the inch, allowing a detailed depiction of relief, river systems, transportation facilities, forest cover and centres of population. Comparisons of different features and areas can be made, as all map sheets of the series are drawn to the same specifications. In addition, all settled areas and regions of northern development have been mapped at larger scales, in particular at 1:50,000 or approximately one and a quarter inches to the mile, and vertical air photographs showing still more details of the terrain are available for the whole country, varying in scale from about one inch to the mile in the Arctic to four inches, or larger, to the mile in settled areas.

Politically, Canada is divided into 10 provinces and two territories. Each province is sovereign in its own sphere and administers its own natural resources and upon such resources, as related to topography, position and climate, is based the economy of the province. The resources (except for game) of the Yukon Territory and Northwest Territories, because of their remoteness, the great extent and the meagre and scattered populations of these areas, are administered by the federal government. The approximate land and freshwater areas of the provinces and territories are given in Table 1.1.

The Canadian Permanent Committee on Geographical Names, administered by the Department of Energy, Mines and Resources, deals with all questions of geographical nomenclature affecting Canada and undertakes research and investigation into the origin and usage of geographical names. The Committee is composed of representatives of the federal mapping agencies and other federal agencies concerned with nomenclature and a representative appointed by each province.

1.1.1 Mountains and other heights

The great Cordilleran mountain system is Canada's most impressive physical feature. Many peaks in the various ranges embodied in the Canadian Cordillera are over 15,000 ft in height, and a total of 576.4 sq miles of territory lies above the 10,000-ft mark. Mount Logan in the St. Elias Mountains of Yukon Territory, which rises 19,850 ft above sea level, is the highest point in Canada.

The highest points in each province are: Newfoundland, 5,232 ft; Prince Edward Island, 465 ft; Nova Scotia, 1,747 ft; New Brunswick, 2,690 ft; Quebec, 5,210 ft; Ontario, 2,275 ft; Manitoba, 2,729 ft; Saskatchewan, 4,567 ft; Alberta, 12,294 ft; British Columbia, 15,300 ft; Yukon Territory, 19,850 ft; and the Northwest Territories, 9,062 ft.

Rossland, BC, is at the highest elevation, 3,465 ft, of any city in Canada and Chilco Lake, with an area of 75 sq miles, is the highest major lake at 3,842 ft. Heights of the more important Canadian mountains and other elevations are given in Table 1.2.

1.1.2 Inland waters

Every year about 8,000,000 million tons of water fall on Canada in the form of rain and snow. Much of it is evaporated but a large amount drains back to the oceans as surface runoff, forming rivers and lakes along its route. This surface water is the dominant feature of the Canadian environment. It has been estimated that about 7.6% of Canada's total area is covered by fresh water (Table 1.1). There are probably more lakes here than in any other country in the world — so many that they have never been counted. The total area of fresh water is given as 291,571 sq miles but this figure does not include most of the small ponds, non-permanent lakes and sloughs, seasonally flooded areas or large areas of marsh and wet tundra. As much as one seventh of all the fresh, liquid, surface water in the world is contained within Canada's boundaries.

A large portion of this water is contained in the Great Lakes. Slightly more than 37% of their total area is in Canada (Table 1.3). These lakes, which rank with the largest bodies of fresh water in the world, are large enough to have measurable, although very slight, tides. Other large lakes in Canada, ranging in area from 12,100 to 9,200 sq miles, are Great Bear Lake, Great Slave Lake and Lake Winnipeg. Countless smaller lakes are scattered over the major portion of Canada lying within the Canadian Shield. For example, in an area of 6,094 sq miles, accurately mapped, south and east of Lake Winnipeg there are 3,000 lakes; in an area of 5,294 sq miles southwest of Reindeer Lake in Saskatchewan there are 7,500 lakes. The size and elevation of Canada's lakes over 150 sq miles in area are listed in Table 1.4.

Lake storage is very valuable — it represents water that can be drawn upon in time of drought to be replaced in time of plenty. Lakes are natural regulators of river flow. However, the true measure of a country's water wealth is the amount of water that can be depended upon to be replaced each year — the amount that remains after evaporation has been subtracted from precipitation. This is the amount that flows in its rivers. Here, too, Canada is very fortunate. The combined mean annual flow of all its rivers has been estimated at 3.5 million cu ft per second — about 9% of the total flow of all the rivers of the world. Set against a population of less than 1% of the world total, this constitutes a very generous endowment of fresh water.

It is understandable that Canada's history of settlement and industrial development has been influenced by its great rivers. The country's first industry, the fur trade, flourished because of the ready access to the interior provided by the St. Lawrence River, the Great Lakes and their tributary streams and the many other great and small waterways. Early exploration and settlement depended on this same natural means of access. The plentiful water supplies of the flat and fertile plains of southern Ontario and Quebec attracted an industrious farming people. The river-borne transportation of lumber and later the power of water-driven turbines were vital factors in the building of the country's industrial base. Today, more than ever, water is the key to Canada's development, supplying the renewable energy required for industrial growth, providing easy and relatively cheap transport for bulk raw materials and playing a vital part in the processing of those materials.

Table 1.5 lists the principal rivers of Canada and their tributaries. The tributaries and sub-tributaries are indicated by indentation of names; thus, the Ottawa and other rivers are shown as tributary to the St. Lawrence, and the Gatineau and other rivers as tributary to the Ottawa.

The accompanying map shows the major drainage basins of Canada. Probably the most important is the Atlantic drainage basin, being dominated by the Great Lakes—St. Lawrence system which drains an area of approximately 678,000 sq miles and forms an unequalled navigable inland waterway through a region rich in natural and industrial resources. From the head of Lake Superior to Belle Isle at the entrance of the Gulf of St. Lawrence the distance is 2,280 miles. The entire drainage area to the north of the St. Lawrence and the Great Lakes is occupied by the southern fringe of the Canadian Shield, a rugged, rocky plateau from which flow many tributary rivers. These rivers, as well as the St. Lawrence itself, provide the electric power necessary to operate the great industries of the area. South of the St. Lawrence, the



smaller rivers are important locally. The Saint John, for instance, drains a fertile area and provides most of New Brunswick's hydro power.

The Hudson Bay drainage basin is the largest in area and its main river is the Nelson. The Winnipeg River, a tributary of the Nelson, is completely developed for hydro-electric power but development of the Nelson itself is just beginning. The Saskatchewan River, tributary to the Nelson, drains the great agricultural region of the mid-west and is now an important source of irrigation and hydro-electric power.

The Arctic drainage basin is dominated by the Mackenzie, one of the world's longest rivers. It flows 2,635 miles from the head of the Finlay River to the Arctic Ocean and drains an area of approximately 700,000 sq miles in the three westernmost provinces and the two territories. Except for a 16-mile portage in Alberta, barge navigation is possible from Waterways on the Athabasca River to the mouth of the Mackenzie, a distance of 1,700 miles.

The rivers of the Pacific basin rise in the mountains of the Cordilleran Region and flow to the Pacific Ocean over tortuous, precipitous courses, rushing through steep canyons and tumbling over innumerable falls and rapids. They provide power for large hydro-electric developments and in season swarm with salmon returning inland to their spawning grounds. The Fraser River rises in the Rocky Mountains and, toward its mouth, flows through a rich agricultural area. The Columbia is an international river which has a total fall of 2,650 ft during its course and has thus a tremendous power potential. Although a considerable portion of the United States potential has been developed, the Canadian portion of the basin has remained relatively untouched until recent years when three large reservoirs were constructed in Canada under the terms of the Columbia River Treaty. These reservoirs now make it possible for British Columbia to develop up to 4,000 Mw of hydro-electric generating capacity in the Columbia basin in Canada. The Yukon River is also an international river but, although the largest on the Pacific slope, it is as yet of relatively little economic importance.

Utilization of inland water. Over 43% of all water withdrawn in Canada (excluding withdrawals associated with hydro projects) is for one end use, condenser cooling in thermal steam-electric plants. However, about 99% of this water is returned for re-use. Municipal water use, including small industrial processors served by the municipal supply systems of Canada, accounts for some 10.5% of current daily water withdrawals. On average, approximately 75% of the water pumped into the system is discharged as storm and sanitary sewage containing waste materials.

Other industrial users, manufacturing and mining firms, account for 38% of the total withdrawals of water in Canada and about 10% of that intake is consumed or lost. Discharged water is frequently returned to source in a highly polluted condition and may be unfit for most uses downstream. Agriculture requires 7.7% of the nation's total withdrawals annually for irrigation, stockwatering and rural domestic use and relatively little is returned to the water supply source.

Hydro-electric power generation utilizes the kinetic energy of falling water to produce energy. Except for evaporation losses from the surface of reservoirs, the water is not consumed or changed in any way. However, flooding of land for storage and interference with natural flow may cause serious adverse effects.

1.1.3 Coastal waters

The coastline of Canada, measuring over 150,000 miles, is one of the longest of any country of the world. It comprises the following estimated mileages (statute) — Mainland: Atlantic 9,843; Pacific 4,363; Hudson Strait 2,643; Hudson Bay 7,623; Arctic 11,884; total 36,356 miles. Islands: Atlantic 18,176; Pacific 11,622; Hudson Strait 5,340; Hudson Bay 9,181; Northwest Territories south of Arctic Circle 13,800; Arctic 57,014; total 115,133 miles.

A comprehensive description of the coastal waters of Canada would require information from sciences such as oceanography, marine biology and meteorology. However, the basic factor in any study of the oceanic-continental margin is the physical relief of the sea floor and the scope of the information presented here is therefore restricted to this and a few salient features of the Atlantic, Pacific and Arctic marginal seas surrounding Canada.

Atlantic. Along this coastal area, the sea has inundated valleys and lower parts of the Appalachian Mountains as well as those of the Canadian Shield. The submerged continental shelf, protruding seaward from the shore, effects the transition from continental to oceanic conditions. This shelf is distinguished by great width and diversity of relief. From the coast of Nova Scotia its width varies from 60 to 100 miles, from Newfoundland 50 to 120 miles (at the entrance of Hudson Strait), and northward it merges with that of the Arctic Ocean. The outer edge of the shelf, known as the continental shoulder, varies in depth from 100 to 200 fathoms before the shelf suddenly gives way to the steep declivity leading to abyssal depths. The overall gradient of the Atlantic continental shelf is slight but the whole area is studded with shoals, plateaus, banks, ridges and islands and the coasts of Nova Scotia and Newfoundland are rugged and fringed with islets and shoals. Off Nova Scotia, the 40-fathom line lies at an average of 12 miles from the shore and constitutes the danger line for coastal shipping. The whole floor of the marginal sea appears to be traversed by channels and gullies cutting well into the shelf.

The main topographical features of the Atlantic marginal sea floor are attributed to glacial origin but land erosion is an important factor. Eroded materials are carried seaward by rivers, ice and wind, and wave action against cliffs and shore banks washes away enormous masses that are deposited over the surrounding sea floor. The topography of the continental sea floor is therefore constantly changing and navigation charts of Canada's eastern seaboard must be continuously revised.

Hudson Bay and Hudson Strait bite deeply into the continent. Hudson Bay is an inland sea 317,501 sq miles in area having an average depth of about 70 fathoms; the greatest charted depth in the centre of the Bay is 141 fathoms. Hudson Strait separates Baffin Island from the continental coast and connects Hudson Bay with the Atlantic Ocean. It is 430 miles long and from 37 to 120 miles wide and its greatest charted depth of 481 fathoms is close inside the Atlantic entrance. Great irregularities of the sea floor are indicated but, except in inshore waters, few navigational hazards have been located.

Pacific. The marginal sea of the Pacific differs strikingly from the other marine zones of Canada. The hydrography of British Columbia is characterized by bold, abrupt relief — a

repetition of the mountainous landscape. Numerous inlets penetrate the mountainous coasts for distances of 50 to 75 miles. They are usually a mile or two in width and of considerable depth, with steep canyon-like sides. From the islet-strewn coast, the continental shelf extends from 50 to 100 sea miles to its oceanward limit where depths of about 200 fathoms are found. There the sea floor drops rapidly to the Pacific deeps, parts of the western slopes of Vancouver Island and the Queen Charlotte Islands lying only four miles and one mile, respectively, from the edge of the declivity. These great detached land masses are the dominant features of the Pacific marginal sea. As is to be expected in a region so irregular in hydrographic relief, shoals and pinnacle rocks are numerous, necessitating cautious navigation.

Arctic. The submerged plateau extending from the northern coast of North America is a major part of the great continental shelf surrounding the Arctic Ocean, on which lie all the Arctic islands of Canada, Greenland, and most of the Arctic islands of Europe and Asia. This shelf is most uniformly developed north of Siberia where it is about 500 miles wide; north of North America it surrounds the western islands of the archipelago and extends 50 to 300 miles seaward from the outermost islands.

The floor of the submerged part of this continental margin is nearly flat to gently undulating, with here and there isolated rises or hollows. Most of it has an average slope seaward of about one half a degree, with an abrupt break at the outer edge to the continental slope whose declivity is commonly six degrees or more. From the Alaskan border eastward to the mouth of the Mackenzie River the shelf is shallow and continuous with the coastal plain on the mainland; the outer edge of the shelf, or continental shoulder, lies at a depth of about 35 fathoms and about 40 nautical miles off shore. This shelf is continuous with that north of Alaska and Siberia. Near the western edge of the Mackenzie River delta, the continental shelf is indented by a deep valley (the so-called Herschel Sea Canyon) whose head comes within 15 miles of the coast. Between Herschel Sea Canyon and Amundsen Gulf, the typical features of the continental shelf are replaced by the submerged portion of the Mackenzie River delta, which forms a great pock-marked under-sea plain, most of it less than 30 fathoms deep, up to 75 nautical miles wide and 250 miles long.

North and east of the submerged portion of the Mackenzie River delta, the continental shelf, while typical in form, is more deeply submerged than that off the mainland and Alaska. Its gently undulating surface is, for the most part, 200 fathoms or more below sea level, and the well-defined, nearly straight continental shoulder is for the most part over 300 fathoms deep, giving way to the smooth continental slope which extends without significant interruption to the floor of the abyssal Canada Basin at a depth of about 2,000 fathoms. The deeply submerged continental shelf extends along the entire west coast of the Canadian Arctic archipelago from Banks Island to Greenland. All of the major channels between the islands — Amundsen Gulf, M'Clure Strait, Prince Gustav Adolf Sea, Peary Channel, Sverdrup Channel and Nansen Sound — have flattish floors at about the same depth as the shelf and appear to enter it "at grade", although there are a few local irregularities that may be the result of glacial action. No deep indentations or canyons are known to cut the continental slope or continental shelf off the archipelago, except one sinuous canyon that heads off Robeson Channel at the northeastern end, close to the coast of Greenland. The submerged sides of the channels of the archipelago, and the slopes from the shoreline at the western edge of the islands to the inner edge of the deeply submerged shelf, are in many places marked by a series of steps or terraces.

The continental shelf bordering the Arctic Ocean as well as the adjacent mainland, particularly near the delta of the Mackenzie River, and the islands of the archipelago have been subjected to increasingly intensive scientific study and mineral resource exploration during the past 15 years. Co-ordinated and continuing programs of research and surveys have studied the bedrock geology, the development of the terrain, the sediments on the sea floor and the nature and history of the ice caps. Gravity, seismic, aeromagnetic, geomagnetic and geothermal investigations have obtained information on the physical characteristics and structure of the rocks beneath the surface, and the nature and stability of the crust underlying the islands, the continental shelf and the continental slope. A complementary program of geodetic, topographic and hydrographic surveys has provided the necessary background maps and charts, and information about both terrestrial and marine physiography for these studies. Along with the technical surveys and investigations in the physical sciences, there have been

less intensive but very relevant studies of the biology of the Arctic lands and oceans. The result of all these activities is that a great deal of reliable scientific information in a wide range of subjects is now available for an area about which very little was known two decades ago.

1.1.4 Islands

The largest islands of Canada are in the North and all experience an arctic climate. The northern group extends from the islands in James Bay to Ellesmere Island which reaches 83° 07'N. Those in the District of Franklin lie north of the mainland of Canada and are generally referred to as the Canadian Arctic archipelago; those in the extreme north — lying north of the M'Clure Strait—Viscount Melville Sound—Barrow Strait—Lancaster Sound water passage — are known as the Queen Elizabeth Islands.

On the west coast, Vancouver Island and the Queen Charlotte Islands are the largest and the most important but the coastal waters are studded with many small rocky islands.

The island of Newfoundland forming part of the province of Newfoundland, the province of Prince Edward Island, Cape Breton Island forming part of the province of Nova Scotia, Grand Manan and Campobello Islands forming part of the province of New Brunswick, and Anticosti Island and the Magdalen group included in the province of Quebec are the largest islands off the east coast.

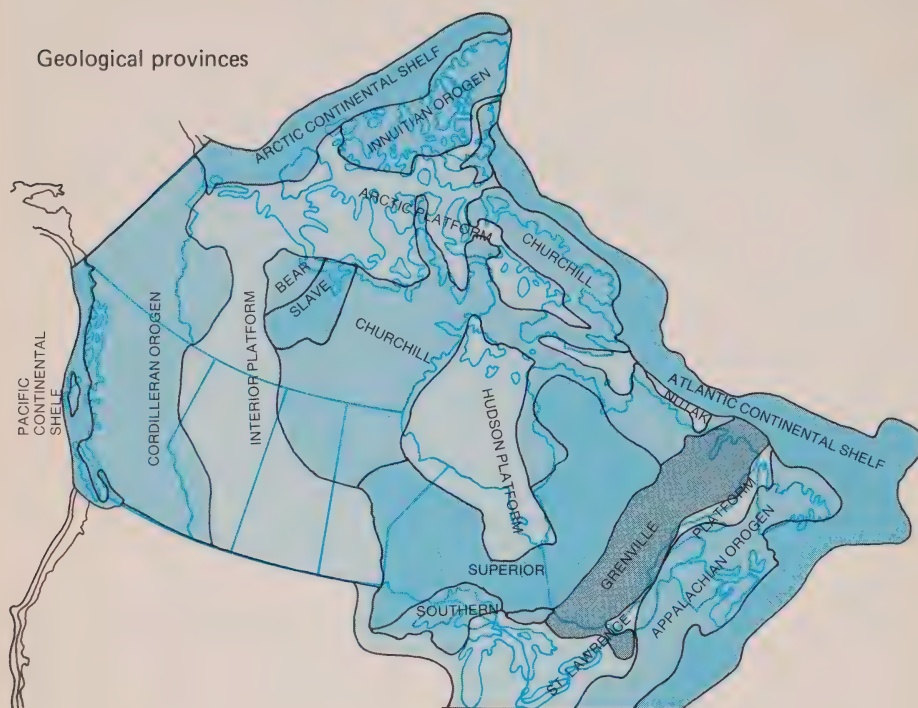
Notable islands of the inland waters include Manitoulin Island (1,068 sq miles in area) lying in Lake Huron, the so-called Thirty Thousand Islands of Georgian Bay and the Thousand Islands in the outlet from Lake Ontario into the St. Lawrence River.

The areas of principal islands by region are given in Table 1.6.

1.1.5 Surveying and mapping

The needs for maps and surveys of Canada are met mainly by the Department of Energy, Mines and Resources. They compile topographical, geological and aeromagnetic maps, aeronautical charts and specialized maps showing electoral district boundaries, land use and other features. Some types of maps and surveys are also produced by provincial and private agencies. In the field of geodesy, the Geodetic Survey maintains a network of horizontal and vertical control points across Canada to establish at least one horizontal and vertical control point within 10 miles of any point in established and economically important areas. The Topographical Survey has completed the mapping of Canada at the scale of four miles to one inch; mapping at a scale of one mile to one and a quarter inches is proceeding. There are 800 maps available on the relatively large scale of one mile to two and a half inches, covering all major cities and their suburbs. Photomaps, a new map-type made possible by advances in air photography and photogrammetry, are now available. The Legal Surveys Division is responsible for the technical management of legal surveys of land under federal jurisdiction, such as the northern Territories, national parks and Indian reserves. It also executes such surveys on behalf of administering departments, collaborates in the demarcation of provincial boundaries, prepares descriptions of electoral districts and generally provides land-surveying services to other departments.

The Surveys and Mapping Branch is the major agency in Canada for the preparation of aeronautical charts showing airports, airways and radio and other aids necessary for air navigation. As a service to map-makers, prospectors, engineers, foresters, town planners and others interested in that field, the Department maintains a National Air Photo Library in Ottawa containing a collection of all air photographs taken by or for the federal government. The Library is also responsible for the storage, documentation and handling of airborne remote-sensing photography and Earth Resources Technology Satellite imagery. Geological surveys provide an inventory of the potential resources of Canada, aid in the discovery of mineral deposits, and assist in other aspects of the national economy influenced by geological factors. Large reconnaissance projects are mounted in the northern regions of the country, and more detailed investigations in the better-known southern areas. Geological maps are published either separately or, more commonly, as part of scientific papers. Geophysical surveys result in maps showing such features as variations in terrestrial magnetism, gravity and seismology. The Geological Survey outlines local magnetic variations indicative of mineral deposits, while the Earth Physics Branch maps the earth's total magnetic field. Seismic observatories throughout Canada compile and update an earthquake zoning map of Canada. A gravity map of Canada is also available.



1.2 Geology

Canada is composed of some 17 geological provinces that may be grouped under four main categories — continental shelf, platform, orogen and shield. The geologically youngest provinces, the Atlantic, Pacific and Arctic Continental Shelves are made up of little-deformed sediments and volcanics, mainly of Mesozoic and Cenozoic age, which have accumulated and are still accumulating along the margins of the present continental mass. The St. Lawrence, Interior, Arctic and Hudson Platforms are formed of thick flat-lying Phanerozoic strata which cover large parts of the crystalline basement rocks of the continental interior, the extension of the Canadian Shield. The Appalachian, Cordilleran and Innuittian Orogens are mountain belts of deformed and metamorphosed sedimentary and volcanic rocks mainly Phanerozoic and Proterozoic age, intruded by granitic plutons. They were produced during the various Phanerozoic orogenies 50 to 500 million years ago. Of the seven provinces comprising the Precambrian Canadian Shield, the Grenville, Churchill, Southern and Bear embrace the orogenic belts that were produced during the Proterozoic orogenies, 900 to 1,800 million years ago. The remaining three, the Superior, Slave and Nutak Provinces, were deformed during the Archean Eon, and include the oldest continental crust known in Canada, 2,500 to 3,000 million years old. The Precambrian orogenic belts have many features in common with those of Phanerozoic age but are so deeply eroded that the mountainous parts have been reduced to plains or lowlands and in many places the basement crystalline rocks upon which the sediments and volcanics initially accumulated are now exposed.

The land and freshwater area of Canada is 3,852,000 sq miles, but unique among the nations of the world, Canada also includes within this area some 858,000 sq miles of marine waters. The rocks beneath have geological features akin to the adjacent regions on-shore. In addition, the submarine area of the bordering continental shelves is about 523,000 sq miles and of the continental slopes, 563,000 sq miles. In common with other maritime nations, Canada exercises sovereign rights over all these adjacent regions under the sea for the purpose

of exploring and exploiting their natural resources, and so, within the confines of the continental slopes, Canada embraces 5,526,000 sq miles (15,000,000 sq km), about 3% of the surface of the globe.

For a full description of Canada's geology see the *1973 Canada Year Book* pp 8-14.

1.3 Climate and time zones

1.3.1 Climate

Shaped by the general movement of air from west to east and the geography of North America and adjacent areas, there are many climates throughout Canada. The climate of the Pacific coast is cool and fairly dry in summer but mild, cloudy and wet in winter. Interior British Columbia has climates which vary more with altitude than with latitude: wet windward mountain slopes where there are heavy snows in winter, dry "rainshadow" valleys which are very hot in summer, and marked day to night temperature contrasts on the high plateaus. A vast area of interior Canada, extending westward from Ontario to the Rocky Mountains, experiences a truly continental-type climate — bitterly cold winters, short but warm summers and scanty precipitation. The southern portions of Ontario and Quebec experience a humid climate with cold winters, hot summers and generally ample precipitation throughout the year. Similarly the four Atlantic Provinces have a humid continental-type climate although in the immediate coastal areas there is a marked maritime effect. On the northern islands, along the Arctic coast and around Hudson Bay true arctic conditions persist, with long frigid winters as only a few months have temperatures averaging above freezing each year. The precipitation is quite light in this tundra area north of the treeline. Between the arctic and southern climates a vast band of Boreal Canada from the Yukon Territory to Labrador has a transitional type climate with bitter long winters but appreciable summer periods. Precipitation is light in the west, but more generous falls occur in the Ungava Peninsula. Detailed studies of the climates of Canada and of the various regions are available from the Atmospheric Environment Service of the federal Department of the Environment.

Climatic data. Temperature and precipitation data for typical stations in various Canadian districts are shown in Table 1.7. Additional data from hundreds of stations and data dealing with other climatological elements are available in the statistical climatological data publications of the Atmospheric Environment Service, Environment Canada. Definitions, methods of observation, the instrumentation used and other information are also to be found in these publications.

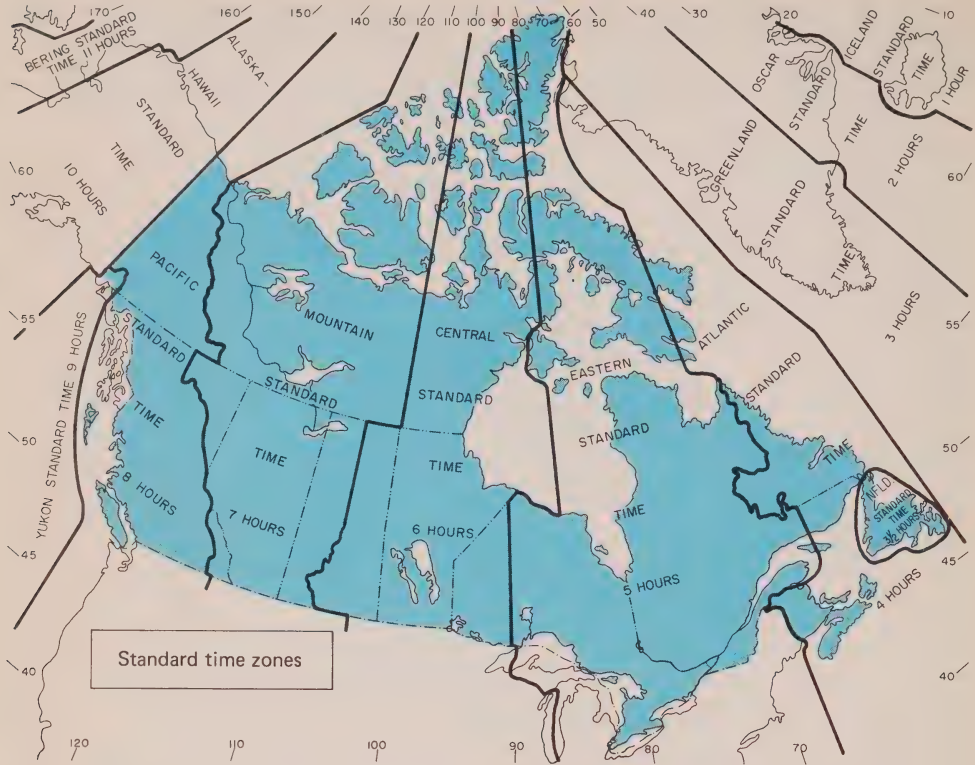
1.3.2 Standard time and time zones

The rotation of the earth on its axis was considered at one time to be entirely uniform and the unit of time, which is the second, was defined as 1/86400 of the mean solar day. Improvements in clocks and in the methods of making astronomical observations demonstrated conclusively that there are irregularities in earth rotation too large to be neglected. So, in 1956 the International Committee on Weights and Measures defined the second in terms of the annual motion of the earth about the sun, called ephemeris time. In 1957 the first cesium atomic clock was calibrated with respect to ephemeris time, but not until 1967 was the cesium second adopted as the international standard. The second today is defined as the duration of 9,192,631,770 periods of the radiation corresponding to a transition of the cesium atom.

Based on atomic clocks, Canada's time is established by the National Research Council with a precision of one ten-millionth of a second per day, and co-ordination with other countries is maintained to the same precision through the *Bureau international de l'Heure* in Paris. Irregularities in the rotation of the earth give rise to a difference between mean solar time and atomic time, and a leap second is introduced to ensure that this difference, called DUTI, does not exceed ± 0.8 seconds. At present DUTI is decreasing by about one tenth of a second per month, and positive leap seconds were necessary on June 30 and December 31, 1972, and December 31, 1973.

A continuous broadcast of Canadian time is made on station CHU, Ottawa (3330 kHz, 7335 kHz, 14670 kHz), with a bilingual voice announcement each minute, and with a split pulse code to give the value of DUTI. Once a day the time signals are broadcast across Canada on the CBC networks.

Standard Time, which was adopted at a World Conference held at Washington, DC, in



1884, sets the number of time zones in the world at 24, each zone ideally extending over one twenty-fourth of the surface of the earth and including all the territory between two meridians 15° of longitude apart. In practice, the zone boundaries are quite irregular for geographic and political reasons. Universal Time (UT) is the time of the zone centred on the zero meridian through Greenwich. Each of the other time zones is a definite number of hours ahead of or behind UT to a total of 12 hours, at which limit the international date-line runs roughly north-south through the mid-Pacific.

Canada has six time zones, the most easterly being Newfoundland Standard Time, three hours and 30 minutes behind UT, and the most westerly Pacific Standard Time, eight hours behind UT. In between, from east to west, the remaining zones are called Atlantic, Eastern, Central and Mountain. On October 28, 1973, the nine hour Western Yukon Time Zone was eliminated by order of the Yukon Territorial Council, placing the entire Yukon eight hours behind UT.

Legal authority for the time zones. Time in Canada has been considered a matter of provincial rather than federal jurisdiction. Each of the provinces and territories has enacted laws governing the standard time to be used within its boundaries. These laws determine the location of the time zone boundaries. Lines of communication, however, have sometimes caused communities near the boundary of a time zone to adopt the time of the adjacent zone, and in most cases these changes are acknowledged by amendments to provincial legislation. During the two World Wars, there were federal enactments concerning time but these were of temporary duration. In 1941 the time determined at the Dominion Observatory was designated as official time for Dominion official purposes. On April 1, 1970, this responsibility was transferred to the National Research Council.

Daylight saving time. Although Daylight Saving Time had been urged in many quarters before World War I, its first use in Canada came as a federal war measure in 1918. Today most of the provinces have legislation controlling the provincial or municipal adoption (or rejection) of

Daylight Saving Time; in the other provinces the authority is left to the municipalities. By general agreement, Daylight Saving, where it is observed, is in force for six months from the last Sunday in April until the last Sunday in October.

1.4 Public land

The total area of Canada and the areas of the individual provinces and territories are classified by tenure in Table 1.8. All lands, with the exception of those privately owned or in process of alienation, are Crown lands under the jurisdiction of either the federal or the provincial governments.

Federal public land. Public lands under the administration of the federal government comprise lands in the Northwest Territories including the Arctic archipelago and the islands in Hudson Strait, Hudson Bay and James Bay, lands in the Yukon Territory, ordnance and admiralty lands, national parks and national historic parks and sites, forest experiment stations, experimental farms, Indian reserves and, in general, all public lands held by the several departments of the federal government for various purposes connected with federal administration. These lands are administered under the Territorial Lands Act (RSC 1970, c.T-6) and the Public Lands Grants Act (RSC 1970, c.P-29).

The largest areas under federal jurisdiction are in the Northwest Territories and the Yukon Territory where only 93 sq miles of a total area of 1,511,979 sq miles are privately owned and 1,406 sq miles are under the administration of the territorial governments.

Provincial and territorial public land. Public lands of Nova Scotia, New Brunswick, Quebec, Ontario and British Columbia (except the Railway belt and Peace River block) have been administered since Confederation by the provincial governments. In 1930, the federal government transferred the unalienated portions of the natural resources of Manitoba, Saskatchewan and Alberta and of sections of British Columbia to the respective governments, and all unalienated lands in Newfoundland, except those administered by the federal government, became provincial public lands under the Terms of Union on March 31, 1949. All land in Prince Edward Island has been alienated except 133 sq miles under federal or provincial administration.

The transfer by the federal government of significant areas of land within and immediately surrounding established communities in the Northwest Territories and the Yukon Territory to the administration of the respective territorial governments began in September 1970. In that year, four such transfers were completed, three in the Northwest Territories and one in the Yukon, for a total of 665 sq miles. Since then nine transfers were completed in the following areas. Yukon Territory: Faro (91 sq miles); Northwest Territories: Frobisher Bay (51 sq miles), Aklavik (8 sq miles), Fort Simpson (140 sq miles), Fort Smith (22 sq miles), Fort Providence (81 sq miles), Hay River—Enterprise (142 sq miles), Norman Wells (175 sq miles), and Fort McPherson (31 sq miles).

1.4.1 Federal parks

Parks Canada, a program of the Department of Indian Affairs and Northern Development, includes national parks, national historic parks and sites, canals, national marine parks, national landmarks and wild rivers. Joint provincial-federal co-operation has resulted in a nation-wide network of parks, historic parks and sites, historic waterways and land trails, and scenic parkways. Parks Canada has its headquarters in Ottawa but operational responsibility for the program rests with the five regional offices: the Atlantic regional office in Halifax, the Quebec regional office in Quebec City, the Ontario regional office in Cornwall, the Prairie regional office in Winnipeg and the Western regional office in Calgary.

National historic parks and sites. The National Historic Parks and Sites of Canada commemorate the persons, places and events which have been declared to be of major significance in the historical development of Canada. The passage of the Dominion Forest Reserves and Parks Act in 1911 was a significant step in the federal government's commemorative program. This Act created within the Department of the Interior a Dominion Parks Board to administer national and historic parks. In 1917, Fort Anne at Annapolis Royal, NS, was transferred from the Department of the Militia and declared Canada's first national park of historic significance.

Upon the recommendation of the Commissioner of the Dominion Parks Board, a seven-member Historic Sites and Monuments Board of Canada was formed to advise the Minister on the matter of sites of national historical interest. The Board met for the first time at Ottawa on

October 28, 1919. The second national historic park was established in 1927 and by 1950 there were nine such parks, receiving over 150,000 visitors annually.

The National Parks Act of 1930 provided that the Governor in Council may set apart any land, the title to which is vested in Her Majesty, as a national historic park to commemorate an historic event of national importance, or preserve any historic landmark or any object of historic, prehistoric or scientific interest of national importance. Until 1953 the Historic Sites and Monuments Board operated under Order in Council authority and no provision was made for Parliament's formal review of the Board's decisions. The Historic Sites and Monuments Act of 1953 provided the statutory base for the operation of the Board and defined the role of the Board as adviser to the Minister whose statutory responsibility was to develop and implement a national program of commemorating historic sites. Further legislation was enacted in 1955 and 1959 to amend and broaden the scope of the original Act. The Canadian Historic Sites Division, now the National Historic Parks and Sites Branch, was created within the Department of Northern Affairs and National Resources in 1955 to develop, interpret, operate and maintain historic parks and sites and to act as secretariat for the Board.

A policy statement on national historic sites in 1968 stated that for commemoration, a site or structure must be closely associated with a person, place or event of national historical importance, or it must illustrate the cultural, social, political, economic or military patterns of history or of a prehistoric people or archaeological discovery, or be valuable as an example of architecture. The statement also included guidelines for the provision of visitor services, interpretative programs and the promotion of information to the public at large. Standards for the preservation, restoration and reconstruction of structures were established which stressed authenticity in the materials used and in the furnishings and artifacts. The policy also recognized the need for a comprehensive program to give full thematic and geographical representation and to establish a long-range planning program to facilitate the development of parks based on such themes as exploration and social, cultural, economic and prehistoric events.

The Historic Sites and Monuments Act provides for a Board of 15 members: two representatives each from Ontario and Quebec and one from each of the eight other provinces appointed by the Governor in Council, the Dominion Archivist, one representative from the National Museums of Canada and one from the Department of Indian Affairs and Northern Development as ex officio members. The members are generally historians of distinction. The Board may recommend that sites, buildings and other structures of national importance be developed as national historic parks or historic sites or that commemoration be carried out by the erection of Historic Sites and Monuments Board of Canada plaques, or in exceptional circumstances, of distinctive monuments. Suggestions for the establishment of historic sites and parks come from many sources — the general public, members of Parliament, historical societies and other groups, department staff and members of the Board themselves. Before a site is referred to the Board for consideration, a background paper is prepared by the National Historic Parks and Sites Branch research staff. The Board then determines the significance of the site and makes its recommendation, which may be either favourable or unfavourable, to the Minister. After ministerial approval has been granted to a project, a development plan is prepared.

Since its establishment, the National Historic Parks and Sites Branch, on the recommendation of the Board, has been instrumental in the creation of some 80 historic parks and major sites of which over 40 are operational and in the commemoration with plaques of some 650 persons and events of national (as opposed to local or regional) significance. Negotiations are being conducted with certain provinces for the acquisition of other sites already declared to be of major national historical significance. The Department has also entered into cost-sharing agreements with provincial and municipal governments and with incorporated non-profit societies for the acquisition and restoration of more than 38 architecturally or historically significant buildings on the understanding that the other party will pay the balance of the acquisition and restoration costs and will maintain the buildings in perpetuity. A number of monuments of distinctive nature and character which commemorate people and events significant in the nation's history are maintained by the National Historic Parks and Sites Branch.

Location, year established and characteristics of national historic parks and sites were carried in the 1972 and 1973 editions of the *Canada Year Book*. Many more are in process of restoration or development and full details may be obtained from the Department of Indian Affairs and Northern Development's publication *Canada's national historic parks/sites*.

Another undertaking of the Branch is the Canadian Inventory of Historic Building. This Inventory, begun in 1970, is a computerized program to survey, analyze and categorize old buildings in Canada. So far the exteriors of more than 110,000 buildings have been surveyed and, of these, some 80,000 have been entered in the computer and indexed; interiors of approximately 10,000 structures selected from these will also be surveyed by the CIHB.

An important step toward the preservation of the nation's historic resources was taken in 1972 with the establishment of Heritage Canada, an independent organization concerned with the conservation of buildings, sites and natural and scenic areas of importance to the country's heritage. It received an initial federal capital endowment of \$12 million and the interest on this fund is used to further its work. Heritage Canada enlists the support of the general public and of foundations and corporations; membership is open to anyone.

National parks. Canada's national parks are the visible evidence of the federal government's efforts to preserve natural areas of outstanding scenic and biological interest for the benefit of the public. The national park concept, which began with the establishment of Yellowstone National Park in the United States in 1872, was soon afterwards applied in Canada. In 1885, the Canadian government reserved from private ownership the mineral hot springs of Sulphur Mountain in what is now Banff National Park. Two years later, this 10-sq mile reserve was extended to 260 sq miles and named Rocky Mountains Park, the first federal park in Canada. Two land reserves in southern British Columbia — Yoho and Glacier — were made by the federal government in 1886, a reserve of 54 sq miles in the Waterton Lakes area of southern Alberta in 1895, and an area of 5,000 sq miles around Jasper, Alta., in 1907. These four reserves, all in the western mountain ranges, together with Rocky Mountains Park, formed the nucleus of the national park system after the Dominion Forest Reserves and Parks Act was passed by Parliament in May 1911. A National Parks Branch was created that year by the federal government to protect, administer and develop the parks.

By 1930, nine more national parks had been established. Three of these were in Ontario and consisted of federally owned Crown land or land held in trust for Indians: St. Lawrence Islands National Park, Point Pelee National Park and Georgian Bay Islands National Park. One in Saskatchewan, Prince Albert National Park, and one in Manitoba, Riding Mountain National Park, were former federal forest reserves. Elk Island National Park near Edmonton was established as a preserve for buffalo and Wood Buffalo National Park, a 17,300-sq-mile area straddling the Alberta—Northwest Territories border, was established as a refuge for the largest surviving herd of buffalo in North America. In British Columbia, through agreement between federal and provincial governments, two scenic areas were established as national parks — Mount Revelstoke National Park and Kootenay National Park.

Between 1930 and 1973 the following were added to the chain of Canada's national parks: Northwest Territories, Nahanni and Baffin Island; Yukon Territory, Kluane; British Columbia, Pacific Rim; Ontario, Pukaskwa; Quebec, La Mauricie and Forillon; New Brunswick, Kouchibouguac and Fundy; Nova Scotia, Cape Breton Highlands and Kejimikujik; Prince Edward Island, Prince Edward Island National Park; Newfoundland, Terra Nova and Gros Morne.

In the case of parks in the Yukon Territory and Northwest Territories, lands have been reserved from all alternative disposition by Order in Council. Within provinces, land is acquired by the province acting within a federal-provincial agreement to establish a national park. These lands are transferred to Canada and the establishment of the park is formalized by Parliament, adding the boundary description in a schedule to the National Parks Act.

In 1971, *The national parks system planning manual* was published, in recognition that new and comprehensive measures are needed to preserve Canada's natural heritage. With a view to protecting not only unique and outstanding areas of the Canadian landscape, but also those representative of its physical and biological characteristics, 41 distinctive natural regions were identified within which natural history themes have been defined.

Encompassing more than 50,000 sq miles, the system is now the largest and most rapidly expanding in the world. It is intended that there will be 40 to 60 national parks in Canada's national parks system by the year 2000.

A detailed list of national parks was included in the 1972 and 1973 editions of the *Canada Year Book*, and a location map and details of these parks are available in *Canada's national parks* published by the Department of Indian Affairs and Northern Development.

Each park is developed to yield the recreational/conservational potential for which it is suited. Sightseeing, camping, fishing, hiking, photography and nature study are the most popular forms of recreation common to the parks. A program was initiated in 1970 to encourage national, provincial and local associations and private citizens to express their views at special public hearings on development plans for specific parks.

In 88 years, through co-operation between provincial and territorial governments, Canada's national park system has grown to become the world's largest. In 1973, over 16 million persons visited the parks.

Canal systems. Eight historic canals and waterways in Ontario, Quebec and Nova Scotia are being developed for natural and historic significance. These canals not only provide a broad spectrum of water recreation activities, but give interesting insights into Canada's early years when they were important transportation links.

In Ontario, the 240-mile Trent-Severn Canal links Lake Ontario to Georgian Bay with 43 locks, one marine railway, 33 miles of artificial canal channels and 207 scenic miles of lake and river channels. Navigation time through each lock is 15 to 20 minutes. The 125-mile Rideau Canal connecting Kingston to Ottawa winds through a section of the beautiful Rideau Lakes region. There are 47 locks. Passage time through each is 10 to 15 minutes. Twelve miles of the waterway is artificial canal, while the remainder of the route uses lake and river channels.

In the Quebec system are the 45-mile Richelieu River route connecting the St. Lawrence River with Lake Champlain, which includes nine locks in the 12-mile Chambly Canal and the St. Ours Lock, and the Ottawa River route which includes the Carillon and Ste. Anne locks. On Cape Breton Island, the half-mile St. Peters Canal runs from Bras d'Or Lakes to the Atlantic Ocean.

National marine parks. Canada is bounded by three oceans and has the largest volume of fresh water in the world. The national parks system will be extended to include representations of the Pacific, Arctic and Atlantic coasts and inland waters, with identification of Marine Natural Regions and Marine Natural History Themes.

National landmarks. Preservation of specific natural wonders, such as the Chub crater in northern Quebec, the frozen pingoes of the Arctic, semi-desert and eroded hills of the Prairies and mountain caves and sea-scapes, would allow on-site interpretation of Canada's natural evolution.

Wild rivers. Many undeveloped Canadian rivers — some with historic appeal — are being surveyed as potential wilderness routes.

Historic waterways, land trails and scenic parkways. Historic water routes, which will include the historic canals, will be developed in co-operation with provincial governments, opening systems of historic waterways across the nation. Historic land trails will be developed for the hiker, horse rider, cyclist, and cross-country skier in co-operation with the provinces and municipalities. Both of these developments will link history with leisure, providing further access to our human heritage. Scenic parkways will lure motorists from super highways to leisurely drives throughout the countryside and provide access to nature trails, picnic sites, campgrounds, historic sites and, where possible, national and provincial parks.

Gatineau Park. In addition to the national parks described above, there is a 138-sq-mile recreation area known as Gatineau Park north of the cities of Ottawa and Hull. Although not designated as a national park, this area is being developed by the federal government as part of the National Capital Region and is under the care of the National Capital Commission. It is a wilderness area of great potential, extending northward from Hull for 35 miles. It now has 25 miles of parkway, magnificent lookouts, lakes, fishing streams, beaches, picnic areas, camping sites, skiing and walking trails and is already one of the finest recreation areas in Canada, enjoyed by nearly 1.8 million visitors each year. A master plan for its further development is under way.

1.4.2 Provincial parks

All provincial governments have established parks within their boundaries. Some parks are wilderness areas set aside in order that some portions of the country might be retained in their natural state. Most of them, however, are smaller areas of exceptional scenic interest which are easily accessible and are equipped or slated for future development as recreational parks with camping and picnic facilities.

Newfoundland. Altogether, 3,109 sq miles of wilderness, reservation, park lands and public beaches are administered by provincial government agencies. Of this land, 2,785 sq miles are contained within two wilderness areas administered by the Wildlife Division of the Department of Tourism. The remaining 324 sq miles of development and reserved public park land are under the jurisdiction of the Provincial Parks Division of the Department of Tourism. Of that area, 74 sq miles are in 45 developed provincial parks, two sq miles in protected public beaches and 248 sq miles in 14 provincial park reserves. Operation of these parks is directed toward preservation of the natural environment and most of them are located in wilderness areas, developed only for picnicking and camping. Regulations prohibit hunting and other types of resource exploitation; sports fishing, however, is encouraged. There is a continuing upward trend in the number of park users, both in day-use and overnight areas.

Prince Edward Island. There are 39 areas under the Prince Edward Island Provincial Park System comprising five classes of parks: nature preserves, natural environment parks, recreation parks, wayside/beach access, and historic parks. The parks system enhances the scenic drives which loop the coastal areas of the province.

Green Park is an historic park in a natural park setting at the junction of the Bedford and Trout rivers. It incorporates a shipbuilding centre consisting of the original home of James Yeo, a shipbuilder of the mid-1800s, a newly constructed interpretative centre and a shipbuilding site in the development stage. Strathgartney Park, a 40-acre tract of land on the Trans-Canada Highway between Charlottetown and Borden is an excellent picnic site and campground with its hardwood groves, fresh spring water and beautiful view over the West River and the surrounding country. Lord Selkirk Park, an area of 30 acres at Eldon, is of historic interest in that it contains an old French cemetery and marks the spot on the shoreline where Lord Selkirk landed. Brudenell River Park and Golf Course, comprising 1,285 acres at Roseneath, has a considerable area of woodland and runs to the shore of the Brudenell River. Jacques Cartier Park, an area of 23 acres at Kildare Beach four miles from Alberton, is of historic significance as the place where Jacques Cartier first landed on Prince Edward Island. Cabot Park at Malpeque, named in honour of John Cabot, is a 300-acre area with sandy beaches and an interesting museum. Several small parks have been developed or are under development. A fee of \$4 is charged for serviced tent and trailer sites and \$3 for unserviced sites. The parks are maintained by the Department of the Environment and Tourism.

Nova Scotia. The provincial park system is administered by the Department of Lands and Forests and consists of 18 overnight campground parks, 45 day-use picnic park and roadside table sites and 16 day-use beach parks having a total acreage of 7,121. An additional 70 sites containing about 6,400 acres are held in reserve for future development. Campground parks are located near major highways throughout the province and are designed to provide overnight camping accommodations and usually contain a day-use picnic ground. They range in size from 65 to 1,200 acres and the number of campsites varies from 30 to 175. Basic facilities include potable water, vault toilets, picnic tables, and dumping stations; there are no hook-up services for trailers. Picnic parks are designed as roadside day-use rest areas and are located at 20- to 40-mile intervals along major highways other than on the controlled access routes. These parks range in size from less than one acre to more than 200 acres and are provided with basic facilities similar to those in campground parks. Day-use beach parks are designed to serve as recreational areas and are provided with picnic tables, potable water, vault toilets and change houses. Additional good quality beaches are being developed dependent upon demand and location. The overnight camping fee is \$2.50 per party per night and there are no vehicle entry permits or day-use fees. The provincial park system provides about 10% of the total number of campsites in the province with the national park system providing about 15% and the private sector the remaining 75%.

New Brunswick. The New Brunswick provincial park system, which is administered by the Department of Tourism, includes 22 recreational parks ranging in size from 25 to 1,400 acres, 28 rest areas, nine campground parks, eight beach parks, a marine park and a resource park. Most of the park sites are located in rural areas, fairly evenly distributed throughout the province, and are adjacent to or easily accessible from main trunk roads. All parks contain tables, some form of toilet facility and a potable water supply, but more elaborate facilities are available in the larger parks. A vehicle fee is charged at some parks and a daily camping fee of

\$2.50 to \$3.50 is in effect at 24 of the larger parks, subject to change without notice. The Department also maintains a wildlife park at Woolastook near Fredericton where various species of wildlife to be found in the province are displayed. In 1973 over 4 million persons visited the provincial parks. Several parks have organized activity programs and supervised swimming with qualified life-guards. Mactaquac, near Fredericton, one of two year-round parks, boasts a championship 18-hole, 7,030-yard golf course, two marinas, and an interpretative program with naturalists on staff. During the winter there are facilities for snowmobiling, cross-country skiing, snowshoeing, tobogganing, skating, sleigh rides and camping. Sugarloaf, near Campbellton, the other year-round park, features an alpine ski hill with three lifts, cross-country skiing, snowmobiling and tobogganing. In the past few years services on the 54,000 acres of parkland New Brunswick maintains have been expanded and improved so that the visitor is offered a full and versatile recreational program.

Quebec. The major parks in Quebec extend over almost 75,000 sq miles, about 13% of the area of the province. Excluding James Bay Park, they cover nearly 20% of the forest area south of the 52nd parallel. There are 30 major parks, the oldest of which are Mont-Tremblant Park, 80 miles north of Montreal, dating back to 1894 and Laurentide Park, 30 miles north of Quebec City, to 1895. The former covers 990 sq miles, and the latter 4,060 sq miles. Gaspé Park, an area of 498 sq miles, was established in 1937 chiefly to protect the caribou, then threatened by extinction; a herd of caribou can now be found on Mount Albert. The same concern for the future of these animals prompted the creation of Laurentide Park in 1895. Unfortunately, in spite of the protection afforded, the caribou eventually disappeared; however, they have since been successfully re-introduced. La Vérendrye Park, 140 miles northwest of Montreal, was created in 1939 as the Mont Laurier—Senneterre Highway Fish and Game Reserve. In 1950, the Quebec government gave the territory its present name in honour of the famous Canadian explorer, Pierre Gaultier de Varennes, Sieur de La Vérendrye, who discovered the Rocky Mountains. This vast and open area of wilderness now extends over 5,257 sq miles. In 1938, an Act provided for the creation of Mont-Orford Park, west of Sherbrooke. Although much smaller in size, only 15 sq miles, this regional park is a recreation-intensive ground where camping is very popular. Since then, more than 20 parks have been successively created, the major ones being: Chibougamau, Port-Daniel, Mistassini, Rimouski, Matane, St. Maurice, Port-Cartier—Sept-Îles, Portneuf, Mastigouche, Joliette and Labelle. These parks are administered directly by the Parks Branch of the Department of Tourism, Fish and Game.

As far as open-air recreation is concerned, fishing has always been the most popular activity in Quebec parks. In 1971, the Department of Tourism, Fish and Game established three new parks — Mastigouche, Joliette and Labelle — to allow access to many lakes and rivers in the proximity of large urban centres. Papineau Park, created in 1965, was also made accessible to a larger public when it was formed into the double Papineau—Labelle Park. To allow as many as possible to use these new facilities, fishing “by the day” was instituted, whereby anglers may reserve an area for one day at a time; reservations may be made 48 hours in advance, on a first-come, first-served basis, by telephoning, toll-free, the central reservations office at one of three numbers depending on whether the call is made in Quebec, Montreal or elsewhere in the province. In 1974 this service was available at nine parks: Matane, Rimouski, Laurentide, Portneuf, St. Maurice, Mastigouche, Joliette, Mont-Tremblant and Papineau—Labelle. The Quebec government has also set aside several rivers as fishing reserves for public use, including the St. Jean, Petite Cascapédia, Matapédia, Ste. Anne, Cap Chat and Matane rivers in the Gaspé area, the Moisie and Laval rivers on the north shore of the St. Lawrence, and the Petit Saguenay, a tributary of the Saguenay River. Salmon is the principal catch. Hunting was generally prohibited in the parks until 1962. Moose hunting for wildlife-management purposes is now allowed, for Quebec residents only, in the following parks: Laurentide, La Vérendrye, Matane, Portneuf, Mont-Tremblant, St. Maurice, Haute-Mauricie and Dunières. Hunting is permitted in Rimouski Park under certain conditions. In 1972, small game hunting was also permitted in Papineau—Labelle, Mastigouche, Joliette, Portneuf and St. Maurice parks.

The growing popularity of camping by the local population and visitors to Quebec has led the Parks Branch to increase the number of campsites as a supplement to the network of privately operated sites. In eastern Quebec, provincial campsites are located at Carleton, Port-Daniel, Moisie, Mont St. Pierre, Percé, Amqui and Trois-Pistoles; at Îles-de-la-Madeleine,

there are camping grounds at Grande-Entrée and Gros-Cap. Closer to Quebec City are St. Alexandre (Kamouraska), Montmagny, St. Jean (Île d'Orléans), Stoneham, Villeneuve, Vincennes (Beaumont) and St. Joseph (Beauce). More or less surrounding Metropolitan Montreal are Mont-Orford, des Voltigeurs (Drummondville), Côte-Sainte-Catherine, Paul-Sauvé (Oka), Dollard-des-Ormeaux, Pointe-des-Cascades, Coteau-Landing and Sainte-Véronique.

To meet the need of snowmobilers the government has provided safe and attractive trails in several parks since 1971: Portneuf, St. Paul-Sauvé (Oka), Mont-Tremblant, Joliette, Mastigouche, Papineau—Labelle parks. Cross-country skiing has become a favourite sport especially for families and groups of friends. The Parks Branch laid out trails in some parks, particularly in the Mercier Camp area of Laurentide Park where heated facilities were installed. Trails are well marked and of various lengths and degrees of difficulty. Mont-Orford, Mont-Tremblant and Paul-Sauvé parks also received large numbers of cross-country skiing and snowshoeing enthusiasts.

Ontario. There are 115 provincial parks available for public use in Ontario and several new parks are in process of development; 136 other areas, comprising 2,091 sq miles, are held in reserve for future development. The total area of the Ontario provincial park system is about 16,163 sq miles. The parklands are administered by the Parks Division of the Ministry of Natural Resources. The seven largest parks — Polar Bear, Algonquin, Quetico, Lake Superior, Missinaibi, Killarney and Sibley — have a combined area of about 15,076 sq miles. Polar Bear Park is the largest in the system, occupying 9,300 sq miles of Hudson Bay Lowland bordering Hudson and James bays containing boreal forest, tundra and arctic flora and fauna. Algonquin Park covers 2,910 sq miles, has 14 picnic and camping areas accessible by car and offers particularly fine canoeing opportunities in the interior.

Under the Wilderness Areas Act of 1959, 40 wilderness areas have been established. They vary in size, character and significance but all were established for their historic, scientific, aesthetic or cultural values. In 1967 a policy of park classification and parkland zoning was established to achieve a balanced park system and to provide a framework for positive and effective development and management. Five park classes were established — primitive, natural environment, wild river, nature reserve and recreation. Comparable zones within parks were also established — primitive, natural, historic, multiple use and recreation. Some areas once protected under the Wilderness Areas Act for their scientific values are being changed in law to be protected as nature reserves under the Provincial Parks Act. There are now six nature reserves, four of which were previously under the Wilderness Areas Act. All nature reserves contain natural features and phenomena that are either unique or typical of the primitive or contemporary landscapes which together form the ecological mosaic of Ontario. By the end of 1973, there were five wild river parks in existence, Mississagi, Chapeau—Nemegosenda, Lady Evelyn, Mattawa and Winisk.

To meet the rising pressures for recreational space Ontario created the North Georgian Bay Recreational Reserve which covers 4,500 sq miles of country lying generally between Algoma and Parry Sound on the north shore of Georgian Bay and includes the channel between Manitoulin Island and the mainland, the 30,000 islands, the route of the voyageurs by way of French River, the remaining shoreline of Lake Nipissing and the La Cloche Mountains. The Reserve is not a provincial park nor a Wilderness Area but an area following a normal course of development which is already used extensively for recreation.

The number of park visitors increases year by year; in 1973 there were over 12 million including 1.6 million campers using over 20,000 campsites. The charge for vehicles is \$1.50 a day or \$15 a year, and the camping charge \$3.50 a night including vehicle. Picnic tables, fireplaces, fuelwood, tested drinking water and washrooms are provided at supervised tent and trailer campgrounds and all parks have trailer sanitation stations. Interpretative and naturalist programs are being expanded continually and such services as museums, outdoor exhibits, conducted trips, illustrated talks and labelled nature trails are available in many parks.

Manitoba. The provincial parks system of Manitoba, administered by the Parks Branch of the Department of Tourism, Recreation and Cultural Affairs, consists of four major classifications of outdoor recreation development: provincial parks, which are large parks with a variety of natural attractions suited to outdoor activities; recreation areas; waysides, which are located on most highways to enhance travel routes and provide attractive rest spots; and heritage areas,

which are areas of outstanding scenic beauty or have natural, physical or historic features of special local interest.

There are 10 provincial parks in Manitoba. Birds Hill Provincial Park comprises 8,400 acres and an 80-acre man-made lake within easy reach of the Manitoba capital. In south-central Manitoba, Spruce Woods Provincial Park is in the valley of the Assiniboine River and features lookouts over the sand dunes of the Bald Head Hills, the province's only truly desert area. Near the western boundary, Asessippi Provincial Park is under development on the southern end of a lake behind the Shellmouth Dam on the Assiniboine. Hecla Provincial Park with an area of 333 sq miles in the southern section of Lake Winnipeg includes a group of islands of which Hecla is the largest. Grindstone Point, adjacent to Hecla Provincial Park, is also being developed as a recreation area in conjunction with the park. Park developments offer resort facilities for water sports, hiking, snowmobiling, hunting and fishing and include marinas and interpretative centres. Hecla village will be developed as an historic Icelandic fishing site.

Manitoba provincial parks have a total area of about 3,385 sq miles. In addition, there are 44 recreation areas ranging in size from four to 2,364 acres and more than 109 roadside facilities. The park system contains 59 campgrounds. Hunting and fishing lodges are common and accommodation in some of the parks ranges from modern resorts and motels to hotels and cabins. Golf, tennis, boating, swimming, fishing, riding and hiking facilities are available, as well as children's playgrounds. A major ski area and a system of snowmobile trails provide for growing participation in winter outdoor activities. Development is continuing in the heritage-area program to preserve and interpret sites, large and small, illustrating the natural and human history of the province. Surveys have been conducted to study potentials along the shores of Lake Winnipeg, along the rivers flowing into Lake Winnipeg from the east and to provide guidance for future development of recreational facilities in Manitoba's Interlake area. In northern Manitoba studies are being made along the Nelson and Churchill rivers.

Popularity of the Manitoba provincial parks and recreation areas is indicated by impressive annual increases in the number of park visitors, estimated at over 4 million for the year ended March 31, 1974. An estimated 126,000 families and groups in tents, trailers and truck campers utilized campground facilities across the province in the 1973-74 fiscal year. The admission fee to Manitoba's provincial parks is \$1 a day or \$5 for the season.

Saskatchewan. Saskatchewan's 15 provincial parks, comprising 1,821 sq miles of recreation land, range from forested parklands in the prairies and valley parks in the Qu'Appelle Valley to rugged northland settings. Each park offers camping, picnicking, boating and swimming facilities and a variety of recreational activities. Eleven of the parks operate a supervised recreation program of regularly scheduled activities for all ages — arts and crafts, hikes along park nature trails, social functions and numerous team sports. Moose Mountain has a split-fieldstone chalet and modern cabin accommodation. Cabin facilities are also available at Cypress Hills, Duck Mountain and Greenwater Lake parks. Golf courses are found at Cypress Hills, Greenwater Lake, Moose Mountain and Duck Mountain parks. The forest of lodgepole pine and white spruce in Cypress Hills Park provides cover for elk, deer, beaver, sharp-tailed grouse; antelope range on the plains nearby. In Duck Mountain, Moose Mountain and Greenwater Lake parks, moose, elk, and bear appear randomly; deer and beaver are common to all, as are several varieties of grouse and many species of waterfowl and smaller land birds. Pike, pickerel and perch abound in almost all park lakes; brook, lake and rainbow trout are found in northern waters. Canoe routes and commercially operated fishing and hunting camps are in the province's three semi-wilderness parks — La Ronge, Nipawin and Meadow Lake. Roadside camp and picnic grounds are in operation and four official campgrounds and several other camping areas are available along the province's 406-mile stretch of Trans-Canada Highway. Saskatchewan also operates 86 regional parks which, although designed primarily with local patrons in mind, attract large numbers of tourists. Danielson Park has a modern visitors' centre with cafeteria and interpretative displays. A 40,000-acre wilderness area in east-central Saskatchewan is appropriately named Wildcat Hill. Marked sites of historic interest total 143 and include the Wood Mountain NWMP Post, Last Mountain House, Touchwood Hills, Canington Manor, Steele Narrows, Fort Carlton, Cumberland House and Duck Lake historic parks. With the increasing trend to winter recreation, ski resorts are in operation at White Track in Buffalo Pound Provincial Park and at Mount Blackstrap in the Blackstrap Recreation

Site. There are also ski slopes in Duck Mountain Provincial Park and several of the regional parks as well as cross-country ski and snowmobile trails in Moose Mountain Provincial Park.

Alberta. Alberta has 51 provincial parks containing 219 sq miles; 47, with a total area of approximately 208 sq miles, are in use and continuing development. Cypress Hills Provincial Park with an area of 78 sq miles is the largest and is situated in the southeast portion of the province. Other parks are: Aspen Beach, Beauvais Lake, Big Hill Springs, Big Knife, Bow Valley, Bragg Creek, Calling Lake, Chain Lakes, Crimson Lake, Cross Lake, Dillberry Lake, Dinosaur, Dry Island Buffalo Jump, Entrance, Garner Lake, Gooseberry Lake, Gregoire Lake, Hasse Lake, Hommy, Jarvis Bay, Kinbrook Island, Lac Cardinal, Ma-Me-O Beach, Miquelon Lake, Moonshine Lake, Moose Lake, O'Brien, Park Lake, Pembina River, Pigeon Lake, Police Outpost, Red Lodge, Rochon Sands, Saskatoon Island, Sir Winston Churchill, Taber, Thunder Lake, The Vermilion, Tillebrook Trans-Canada Campsite, Wabamun Lake, Williamson, Willow Creek, Winagami Lake, Woolford, Writing-On-Stone, Youngs Point. These parks which are generally provided with picnic, camping and playground facilities are maintained by the Department of Lands and Forests, Provincial Parks Division, primarily for the recreation and enjoyment of residents and visitors. There is a park within easy reach of almost every town. The most northerly park is Gregoire Lake, about 20 miles south of Fort McMurray and the southernmost park is Police Outpost which adjoins the Alberta-Montana border. Alberta's provincial parks are visited by over 4 million tourists and vacationers annually.

In addition to the recreational parks, 26 sites have been established to mark and preserve locations of historical interest. They are: Athabasca Landing, Buckingham House, Bugner Plantation, Coronation Boundary Marker, Early Man Site, Fort DeL'Isle, Fort George, Fort Vermilion, Fort Victoria, Fort White Earth, Frog Lake Massacre, Grizzly Bear Telegraph Station, Hay Lakes Telegram Station, Head-Smashed-In Buffalo Jump, Massacre Butte, Ribstones, Rocky Mountain House Fort, Standoff, Stephansson, Twelve Foot Davis, Shaw Woolen Mill, Rev. George McDougall's Death Site, McLeod Fort, Indian Stone Pile, St. Joseph Industrial School and Old Women's Buffalo Jump.

Willmore Wilderness Provincial Park adjoins Jasper National Park in the north and extends along the British Columbia border. Wilderness areas have been set aside to preserve as far as possible the natural scene and are neither subject to development nor provided with roads. Two wilderness areas were established under the Forest Reserves Act in 1961: Willmore Wilderness Provincial Park has an area of 1,775 sq miles, Siffleur Wilderness 159 sq miles and White Goat Wilderness 489 sq miles. The Ghost River Wilderness area of 59 sq miles was established under the Provincial Parks Act in 1967. The Ghost River, Siffleur and White Goat Wilderness areas were re-established under the Wilderness Areas Act in 1971. The wilderness areas are complemented by six natural areas established during 1968-70 in representative zones of the province: Kootenay Plains, 13 sq miles; Foothills, 160 acres; Parkland, 159.2 acres; Brown-Lowrey, 640 acres; Red Rock Coulee, 801 acres; and Plateau Mountain, 320 acres.

British Columbia. There are 310 (175 developed) provincial parks in British Columbia, having a total area of about 13,350 sq miles. These parks are classified as A, B and C. Class A parks are intended to preserve outstanding natural, scenic and historic features of the province for public recreation; they have a high degree of legislative protection against exploitation and alienation. Class B parks are also primarily for the protection of natural attractions but other resource use may be permitted if it does not unduly impair recreational values. Class C parks are intended primarily for the use of local residents and are usually managed by local park boards. Nature Conservancy Areas in any park are fully protected from resource development and are dedicated to a variety of recreational uses. In addition to provincial parks there are 13 Recreation Areas encompassing a total area of 875 sq miles administered by the Parks Branch. There are immense wilderness areas such as Tweedsmuir Park and Wells Gray Park and outstanding scenic and mountain reserves such as Garibaldi, Mount Robson, Manning, Bowron Lake and Mount Edziza Parks.

In 1973, 10 new major provincial parks were established and the area of Mount Assiniboine Park was increased from 20 sq miles to 150 sq miles. Atlin, 900 sq miles, in the north-west corner of the province on the Alaska boundary is the largest of the 10 new parks. Naikoon Park, 280 sq miles on the northeast tip of Graham Island is the first major park in the

Queen Charlotte Islands. Nine of the new parks and 73 existing parks were established by an act of the legislature giving them complete protection by law. The formal gardens of Peace Arch Park are a monument to the goodwill between Canada and the United States. Vancouver Island has a chain of small forested parks of which the best known are Little Qualicum Falls, Miracle Beach and Goldstream. The gold town of Barkerville was restored and became the first provincial historic park; Fort Steele in the East Kootenay area is also being restored to preserve another of British Columbia's pioneer settlements. Eighteen marine parks with mooring facilities and campgrounds have been developed on mainland inlets and coastal islands.

The popularity of British Columbia's parks with their integrated campgrounds and picnic areas is attested to by the fact that nearly 10 million park visits were recorded during 1973; about 19% of the visitors were campers. Mount Seymour, Cultus Lake and Golden Ears Parks were the most widely used.

1.4.3 The National Capital Region

Canada's Capital lies in a magnificent natural setting on the south shore of the Ottawa River below the Chaudière Falls and just above the confluence of the Rideau and Gatineau rivers. The original inhabitants of this area were the Algonquin Indians who were driven out by the Iroquois in the middle of the 17th century. Champlain explored the Ottawa in 1613 and called it "la grande rivière des Algomequins"; early English traders called it the Grand River. "Ottawa" is the anglicized form of Outaouac or Outaouais, the name of the Indian tribe from Lake Huron which traded with the French in the 17th century. Explorers, fur-traders, missionaries and, during the 19th century, lumbermen and settlers travelled up and down the Ottawa River.

The first settlement in the region was founded by Philemon Wright from Woburn, Massachusetts. Early in 1800 he and a small group of farmers established a settlement in what is now Hull; he brought in tradesmen and soon had a small self-sufficient community. Wright started the great Ottawa Valley timber trade by taking a raft to Quebec City in 1806, fortuitously meeting England's need for an alternative source of timber when Napoleon had closed the Baltic timber trade.

Settlement on the south shore of the river commenced in earnest about a generation later. The War of 1812 drew attention to the vulnerability of the line of communications along the St. Lawrence River linking Quebec City with the settlements in Upper Canada; a secure alternative route was needed. After many delays and studies, a new route to Kingston via the Ottawa River and Rideau and Cataraqui river systems was approved. Finally, in 1826, Lieutenant-Colonel John By of the Royal Engineers was sent to the Chaudière area to build a canal from that point to Kingston. By employed two companies of Royal Sappers and Miners and a labour force, mainly Irish, of several thousand men to construct the canal. In 1823, the Earl of Dalhousie, Governor in Chief of British North America, had secured commanding ground for the Town. In 1827 By laid out two settlements, Upper Town and Lower Town, adjacent to this Crown land, at that time called Barrack Hill. The canal was completed in 1832 and Bytown began to grow and prosper. Stores, factories, banks, churches and schools appeared. Steamboats plied the river and canal. A newspaper, the *Bytown Gazette*, was started in 1836.

Bytown was now the inland centre of the squared timber trade and by 1850 could boast of some fine stone buildings, among them the home of Thomas MacKay which today forms the central part of the residence of the Governor General of Canada. A change then occurred in the timber industry; the British system of preferential import duties on squared white and red pine logs was abandoned and trade began to decline. However, by this time the accessible forest stands of the eastern United States were depleted and sawn lumber was needed to house a growing population. Also, the American railway and canal network had extended to the Canadian border making transportation easy. Encouraged by these favourable conditions American industrialists came to Bytown and established large sawmills by the Chaudière Falls. Soon the islands about the falls and the flats on both shores were covered with lumber piles and loaded barges were on their way to the American market. The lumber industry began its rise to a position of dominance. At the beginning of 1855, Bytown became a city and took the name Ottawa.

The United Province of Canada, since its formation in 1841 had shuttled its capital between Kingston, Toronto, Montreal and Quebec and was now trying to agree on a permanent site. At the end of 1857 Queen Victoria settled the dispute by choosing Ottawa. Government

buildings for the new capital were designed and contracts were let in 1859 for their construction. However, the cost was much greater than expected and it was not until 1866 that the government of the Province of Canada actually moved to Ottawa. The next year the first Parliament of the new Dominion of Canada met in an incomplete Parliament Building, situated on the former Barrack Hill.

The nation was prosperous during most of the next decade. Ottawa grew and the government expanded as the Dominion extended its authority over more and more of British North America. In 1871 the city had a population of about 22,000. Many fine homes and stores in stone and brick were built. The Departmental Buildings, flanking the Parliament Building on the Hill, were enlarged. An old wooden City Hall near the Rideau Canal was replaced in 1876 by a stone building and a large post office was erected at the city's centre. By the end of the century, Ottawa was a flourishing industrial centre with a population of 59,000. It remained the hub of the lumber industry of eastern Canada, had the largest paper mills in the country and the leading match factory in the world. However, little effort had been made to preserve or enhance its natural beauty until the Ottawa Improvement Commission was formed in 1899 and the Driveway along the Rideau Canal was begun. Progress was slow but in the years up to the beginning of World War I the city centre began to take on a new face. Many new government buildings were built — the Dominion Observatory and Geodetic Building at the Experimental Farm, the Archives Building, the Victoria Memorial Museum, the Royal Canadian Mint and the Connaught Building. In 1912 the Grand Trunk Railway completed construction of the Union Station and the Chateau Laurier. During this period there were several studies and plans for the improvement of the National Capital but these were deferred because of the War and for other reasons. Fire destroyed the Parliament Building in 1916, leaving standing only the Library which now forms part of the magnificent building of neo-Gothic architecture which replaced it. The beautification of the Capital was continued by the Ottawa Improvement Commission until 1927 when it was replaced by the Federal District Commission. The first major step in the redevelopment of the National Capital took place in 1951 with the tabling of a comprehensive master plan for the National Capital Region, the "Gréber Plan". The National Capital Commission was formed in 1959 to carry out its recommendations.

Ottawa today, with a population of some 300,000, and the city of Hull on the north side of the Ottawa River, with a population of about 65,000, comprise the core of the National Capital Region, an area of about 1,800 sq miles in Ontario and Quebec. In lineal distance, the nearest extremity of the Region to Parliament Hill is 18 miles and the farthest is 35 miles. Within that area there are 57 municipalities and a total population of about 600,000. Industrial development in the Region is limited, a large proportion of the work force being employed by the federal government or associated with government functions.

Although the terms of reference of the National Capital Commission are "to prepare plans for and assist in the development, conservation and improvement of the National Capital Region in order that the nature and character of the seat of the Government of Canada may be in accordance with its national significance", it should be noted that the Commission does not have jurisdictional authority over any of the municipal or regional authorities or the two provincial governments concerned. Most matters affecting the municipalities — such as planning, zoning, land use, building density, public transit, parking and construction of streets, arterial roads and highways — are within their sole jurisdiction, subject only to provincial government approval, so that the National Capital Commission in its development efforts depends essentially upon the co-operation of each municipality and provincial government. As a result of this co-operation, the cities of Ottawa and Hull and their surrounding areas have, as a whole, become an efficient and aesthetically satisfying place in which to carry on the nation's business and a fitting symbol of Canada's cultural and linguistic values.

In recent years, the efforts of the Commission have focused on the development of a unified and lively core for the Capital. At a constitutional conference in Ottawa in 1969, the federal and provincial first ministers declared "the cities of Ottawa and Hull and their surrounding areas" to be the Canadian Capital Region. Almost immediately, work began to remove the longstanding economic disparity between Hull and Ottawa. Fifty-nine acres have been acquired in Hull for a federal building program to house various government departments. These 59 acres include 44 acquired in 1972 by the Commission from the E.B. Eddy Company. In 1973 work was completed on the new Portage Bridge linking Ottawa and Hull and the new Airport Parkway from the airport to downtown Ottawa—Hull was opened.

1.5 The environment

The Department of the Environment was created as a federal government department in June 1971 to spearhead the attack on pollution and ensure the proper management and development of Canada's renewable natural resources. It has the responsibility to initiate government-wide programs and to co-ordinate efforts related to environmental protection. It also provides specialist advisory services to other departments both in the formulation of programs and in the development of regulations under Federal Acts assigned to other ministers.

The Environmental Protection Service of the Department is responsible for developing and enforcing environmental protection regulations and other instruments used in implementing federal laws relating to the environment. It also serves as an information source for other federal departments administering legislation under which environmental regulations are developed.

The principal objective of the Water Pollution Control program is the control and abatement of water pollution in Canada. The main objectives are: the reduction of existing pollution and the prevention of new problems; achievement of regional water quality objectives by means of appropriate programs; and the development of new technologies to solve water pollution control problems more economically. Water pollution control regulations and guidelines are being developed for all major industrial sectors. At the moment regulations governing the pulp and paper industry, the chlor-alkali mercury industry and the petroleum refinery industry already exist. These regulations are promulgated under the Fisheries Act and restrict the amount of effluents an industry can discharge into waters inhabited by aquatic life. Other programs include water pollution surveys in shellfish growing areas; phosphorus concentration control regulations; analytical and advisory services to other federal departments and agencies; inventories of water pollution problems in Canada and annual assessments of pollution control costs and studies on the treatment of municipal and industrial wastewaters.

The broad objectives of the Air Pollution Control program are to preserve, restore, or enhance the quality of the ambient air in Canada for optimum social and economic benefits. Programs carried out to achieve these objectives include: collection and evaluation of information regarding air pollution sources in Canada; development of abatement and compliance programs for stationary and mobile air pollution sources; preparation of regulations controlling the amount of lead in leaded gases and defining the limits of lead and phosphorus in "unleaded" grades of gasoline; maintenance of a mobile motor vehicle emission testing facility and promulgation of national air quality objectives.

Studies carried out under the Ecological Protection program include development of a federal approach to environmental noise control; development of environmental contaminants legislation; development and implementation of a solid waste management program. Environmental accidents, such as oil spills, occur frequently. The Environmental Emergency program examines the national state of preparedness to cope with such accidents and co-ordinates the development of over-all improvement on the state of preparedness.

The objective of the Federal Activities Protection program is to demonstrate environmental leadership on the part of the federal government. The program serves as a focal point in dealing with environmental protection matters associated with federal government departments, agencies and Crown corporations. All proposed new projects that will be managed by or receive financial assistance or permits from the federal government must be evaluated for the possible effects they might have on the environment. Protective measures must be incorporated into the planning, design and operation of the projects.

The federal government is also committed to cleaning up pollution problems at existing federal facilities within a reasonable time frame. Cleanup projects have dealt with water, air, noise, dust and solid waste pollution problems at airports, government offices, laboratories, grain elevators, defence bases, parks and ships and harbours.

1.5.1 Federal legislation

There are already a large number of statutes that are important in renewable resources and environmental quality management. Major pieces of legislation for which the Department of the Environment is responsible include the following: The Fisheries Act (and Petroleum Refinery Liquid Effluent Regulations) (RSC 1970, c.F-12, amended 1970); The Canada Water Act (and phosphate regulations) (RSC 1970, c.5 1st Supp.); The Migratory Birds Convention Act (RSC 1970, c.M-12); The International River Improvements Act (RSC 1970, c.I-22); The

Game Export Act (RSC 1970, c.G-1); The Fisheries Development Act (and the Fish-Chilling Assistance Regulations) (RSC 1970, c.F-21, amended 1973 and 1974); The Clean Air Act (and Lead Free Gasoline Regulations) (SC 1970-71-72, c.47); The Forestry Development and Research Act (RSC 1970, c.F-30); Canada Wildlife Act (SC 1973, c.21).

In view of the need to co-ordinate and consolidate the activities relating to environmental quality and renewable resource matters carried out by federal agencies other than the Department of the Environment, an Interdepartmental Committee on the Environment was established in 1973. This committee, with representation at the deputy minister level, is the primary forum for interdepartmental consultation on environmental and related resource issues and assists the Department of the Environment in co-ordinating the development and implementation of Canada's environmental policies and programs.

1.5.2 Federal-provincial programs

Jurisdiction over renewable resources and environmental matters is shared by the federal and provincial governments. In some areas, such as fisheries, legislative jurisdiction rests with the federal government and certain management and administrative responsibilities have been delegated to the provinces; in other areas, such as forest resources, the legislative jurisdiction rests with the provinces. Frequently management practices for one resource may affect the management of others and virtually all resource management practices are related to environmental quality. As a result, many of the federal government's environmental protection and renewable resource programs are carried out in co-operation with the provinces.

In order to further develop and co-ordinate co-operative action, the Department of the Environment initiated discussions with the provinces in 1973 toward concluding Federal-Provincial Accords for the Protection and Enhancement of Environmental Quality. These accords will provide the mechanism for co-operative action by federal and provincial governments and are viewed as "umbrella" agreements under which subsidiary agreements covering specific aspects of environmental action may be signed. It is anticipated that these accords will be signed with all provinces by December 1974.

There is such a wide range of federal-provincial programs and activities in the environmental and renewable resource field that it would be impossible to list them all here. Examples of current federal-provincial programs follow.

Assessments of the potential environmental impact of major resource development or transportation projects, in which the federal government has an interest, are being carried out by federal departments in co-operation with provincial and territorial governments. The Department of the Environment is developing procedures for the implementation of a more formalized environmental assessment, review and protection process which will ensure that environmental matters are taken into account throughout the planning and implementation of projects, programs or activities in which the federal government has an interest. This process will provide for consultation and co-operation with the provinces and territories in assessments of projects of mutual concern.

The National Air Pollution Surveillance Network established under the authority of the Clean Air Act is another example of federal-provincial co-operation. The 136 monitoring stations installed as at December 31, 1973, are operated (with certain exceptions) by the provincial governments using monitoring equipment loaned by the federal government. The data is processed, published and disseminated by the federal government.

Solid waste management studies are being carried out under specific cost-sharing agreements between the Department of the Environment and the respective provincial governments, in the National Capital Area, St. John's, Nfld., and Charlottetown, PEI, regions.

The planning and management of Canada's water resources require continuing institutional arrangements within which all jurisdictions, competences and capabilities can be brought together for joint goal setting, planning and operation. Federal-provincial agreements under the authority of the Canada Water Act were in operation in 1973 with the provinces of British Columbia, Alberta, Saskatchewan, Manitoba, Ontario and New Brunswick on several aspects of inland waters study and management. These include agreements for the provision of federal contributions to works and structures to assist in the conservation and control of water resources; agreements for joint study of various aspects of the quality and quantity of water in river basins and lakes systems; and agreements for joint studies for the planning and development of water resources in various drainage basins. (For further information on several of

these projects, see the 1972 *Canada Year Book* p 520.) Also, under the Canada Water Act, arrangements are made with individual provinces as required to co-ordinate federal and provincial water quality monitoring programs and exchange data. There are no intergovernmental payments involved and this program, initiated in 1966, is continually modified to take account of new pollution problems.

There are many other formal or informal federal-provincial programs related to specific aspects of renewable resources and the environment such as forest and wildlife management, hydrometric data gathering, flooding assistance and flood control, forest pest control, fisheries, and specific non-recurring joint programs are developed from time to time. An example of this is the one-year joint Canada/Ontario study to survey Great Lakes shoreline damage resulting from recent high water levels and to provide the basis for recommendations on long-term remedial and protective measures.

Further information on these programs is available in a report entitled *Descriptive inventory of federal-provincial programs and activities* published in January 1974 by the Privy Council Office.

1.5.3 International programs

Canada is involved in two distinct types of multilateral programs — those which are primarily environmental and those which are primarily resource conservation and management. Most of the latter focus on the aquatic environment. For example, Canada is a member of the International Council for Exploration of the Sea. This 17-member body encourages and co-ordinates studies of the marine environment with particular reference to the living resources of the sea, primarily in the north Atlantic. Canada is also a member of 10 international fisheries commissions established under the terms of formal Conventions. These commissions assume responsibility for the investigation of specific living marine resources in defined areas, in order to further rationalize development and conservation of fisheries of common concern to member states.

Canada also participated in the International Hydrological Decade (IHD) (January 1, 1965 — December 31, 1974) set up under United Nations Education, Scientific and Cultural Organization (UNESCO) auspices to facilitate a better understanding of hydrological phenomena to allow prediction of the results of development of water resources in the interests of better management. The National Co-ordinating Committee is composed of representatives from federal, provincial, university and specialized agencies. There are IHD committees in eight provinces.

Within the framework of the International Hydrological Decade, Canada and the United States are involved in an intensive study of Lake Ontario under the title International Field Year for the Great Lakes. This field work was conducted between April 1, 1972 and March 31, 1973 with the object of organizing the data and preparing a report by the end of 1974.

In the area of environmental concerns but still within the aquatic environment, Canada has continued to play an active role in the Intergovernmental Maritime Consultative Organization (IMCO), one of the specialized agencies of the United Nations. In particular it has joined the newly created Marine Environment Protection Committee. The International Convention on Dumping of Wastes at Sea, formulated in accordance with a recommendation of the Stockholm UN Conference and concluded and opened for signature on December 29, 1972, has been signed by Canada and work is now proceeding on its ratification. In October 1973, IMCO sponsored an international conference on marine pollution which drafted an international agreement regulating the intentional and negligent discharges of oil and other harmful substances by ships and other equipment operating in the marine environment. This convention is now open for signature.

Because of Canada's extensive coastline and continental shelf, it has been deeply involved in the preparations for the Third United Nations Conference on the Law of the Sea. The procedural session opened in New York in December 1973 and the substantive session took place in July and August 1974, in Caracas, Venezuela. Among the issues dealt with were sovereign rights over the resources of the continental shelf; rights concerning the management and conservation of living resources in coastal waters; rights of coastal states to take measures to protect their marine environment; rights to control scientific research within zones of maritime jurisdiction; and rights of all states to the disposition of the riches of the seabed beyond national jurisdiction for the benefit of all mankind.

Of the broad-spectrum multilateral environmental organizations the newest and the one with the widest scope is the United Nations Environment Program (UNEP) which was formed as a result of the Stockholm United Nations Conference on the Human Environment in 1972. Canada is a member of the Governing Council of this body and has been particularly active in the development of its program and contributed to the UN Environment Fund. Nationally a federal-provincial task force has been preparing a National Action Plan to reflect a co-ordinated response to the United Nations Action Plan taking into account Canadian needs and priorities. At the same time Canada will continue to participate in other related UN sponsored conferences such as the World Population Conference held in Bucharest, Romania, in August 1974, and the UN Conference-Exposition on Human Settlements in Vancouver, 1976.

In 1973 Canada became a full member of the Economic Commission for Europe (ECE), one of the regional economic commissions within the UN system. It has therefore initiated a review of the extent to which it should participate in the environmental activities of the Commission, particularly those of the Senior Advisers to the ECE on Environmental Problems. In addition to attending two meetings of the senior advisers, Canada participated in the fourth session of the Working Party on Air Pollution and in several environmental seminars sponsored by the ECE.

Canada has also continued to participate in the UNESCO program on Man and the Biosphere (MAB). Internationally, Canada has been represented on most of the panels of experts and working groups convened by UNESCO to establish the main guidelines for the program. Nationally, the two Canadian committees — Canadian Committee for MAB and the Interdepartmental Committee for MAB — have jointly prepared a progress report entitled *Prospectus for Canada/MAB* which sets out the general objectives, characteristics, and research themes, and identifies the socio-environmental problems which might best serve as the focus for the Canadian MAB program. Four sub-program areas have been identified: urbanization and industrialization, agricultural and forestry management practices, management of coastal ecosystems, and industrial development in the Arctic, sub-Arctic and other isolated regions.

In 1970 the Organization for Economic Co-operation and Development established an Environment Committee to promote understanding and international agreement on the assessment of the nature and implications of environmental problems and proposed solutions. Canada has participated actively in the work of this Committee and its various sector and advisory groups. Progress reached the stage of specific recommendations in a number of areas in 1973, including: a recommendation to reduce man-made emissions of mercury, a decision to control the manufacture of polychlorinated biphenyls, and guidelines for actions to reduce emissions of sulphur oxides and particulate matter from fuel combustion in stationary sources. Preparatory work has begun for the 1974 meeting of the Environment Committee at the ministerial level.

Canada is also a member of the North Atlantic Treaty Organization's Committee on the Challenges of the Modern Society. The work of this body is conducted through a series of pilot projects on specific problems with participation by those members that have a particular interest in that problem. Canada has participated in a number of pilot projects and provided leadership in the inland waters pollution pilot project. Work on this project was completed in 1973.

Many of the above organizations are involved in monitoring programs and Canada has continued to participate in these collaborative efforts. For example, Canada is a member of the World Weather Watch and has been setting up a 10-station network for monitoring atmospheric air pollution in non-urban areas. In addition, and in co-operation with the provinces, Canada is providing air quality data in a number of Canadian cities as part of a World Health Organization program. Canada also participates in the Working Group for the Integrated Global Ocean Station System and the Group of Experts on the Scientific Aspects of Marine Pollution. Canada has been actively involved in the continuing development of the Global Environmental Monitoring System, an integral part of the UNEP Earthwatch program.

Sources

- 1.1 Geography Division, Surveys and Mapping Branch, Department of Energy, Mines and Resources; population of Canada from the Census Field, Statistics Canada; population of the United States and Brazil, and areas of the USSR, China and Brazil from the United Nations *Statistical year book — 1971*.
- 1.1.1 Topographical Survey Directorate, Surveys and Mapping Branch, Department of Energy, Mines and Resources.
- 1.1.2 - 1.1.3 Information Services Branch, Department of the Environment.
- 1.1.4 - 1.1.5 Geography Division, Department of Energy, Mines and Resources.
- 1.2 Geological Survey of Canada, Department of Energy, Mines and Resources.
- 1.3.1 Information Services Branch, Department of the Environment.
- 1.3.2 Division of Physics, National Research Council.
- 1.4 - 1.4.1 Information Services, Department of Indian Affairs and Northern Development; except Gatineau Park supplied by the National Capital Commission.
- 1.4.2 Supplied by the respective provincial government departments.
- 1.4.3 National Capital Commission.
- 1.5 Information Services Branch, Department of the Environment.

Tables

..	not available	e	estimate
...	not appropriate or not applicable	p	preliminary
—	nil or zero	r	revised
--	too small to be expressed		certain tables may not add due to rounding

1.1 Approximate land and freshwater areas, by province

Province or territory	Land sq miles	Freshwater sq miles	Total sq miles	Percentage of total area
Newfoundland	143,045	13,140	156,185	4.1
Island of Newfoundland	41,164	2,195	43,359	1.1
Labrador	101,881	10,945	112,826	3.0
Prince Edward Island	2,184	—	2,184	0.1
Nova Scotia	20,402	1,023	21,425	0.6
New Brunswick	27,835	519	28,354	0.7
Quebec	523,860	71,000	594,860	15.4
Ontario	344,092	68,490	412,582	10.7
Manitoba	211,775	39,225	251,000	6.5
Saskatchewan	220,182	31,518	251,700	6.5
Alberta	248,800	6,485	255,285	6.6
British Columbia	359,279	6,976	366,255	9.5
Yukon Territory	205,346	1,730	207,076	5.4
Northwest Territories	1,253,438	51,465	1,304,903	33.9
Franklin	541,753	7,500	549,253	14.3
Keewatin	218,460	9,700	228,160	5.9
Mackenzie	493,225	34,265	527,490	13.7
Canada	3,560,238	291,571	3,851,809	100.0

1.2 Principal heights in each province

Province and height	Elevation ft	Province and height	Elevation ft
NEWFOUNDLAND		QUEBEC (concluded)	
Long Range Mountains		Rond Summit (Sutton Mountains)	3,175
Lewis Hills	2,672	Mount Bayfield	2,925
Gros Morne	2,644	Mount Orford	2,875
Table Mountain (St. Barbe District)	2,375	Hereford Mountain	2,775
Mount St. Gregory	2,251	Barn Mountain	2,775
Gros Paté	2,152	Le Pinacle Mountain	2,325
Blue Mountain	2,128	The Laurentians	
Blue Hills of Couteau		Mont Tremblant	3,175
Peter Snout	1,625	Mont Sainte-Anne	2,625
Central Highlands		Mont Sir Wilfrid	2,569
Main Topsail	1,822	Monteregian Hills	
Mizzen Topsail	1,761	Brome Mountain	1,750
Torngat Mountains		Shefford Mountain	1,700
Unnamed peak (58°57' 63°47')	5,232	Mont Saint-Hilaire	1,350
Cirque Mountain	5,144	Yamaska Mountain	1,350
Mount Cladonia	4,766	Rougemont	1,300
Mount Eliot	4,553	ONTARIO	
Mount Tetragona	4,450	Highest point, Timiskaming District	
Quartzite Mountain	3,890	(47°20' 80°44')	2,275
Blow-Me-Down Mountain	3,880	Ogidaki Mountain	2,183
Kaumajet Mountains		Batchawana Mountain	2,142
Bishops Mitre	3,650	Tip Top Mountain	2,099
Finger Hill	3,390	Niagara Escarpment	
PRINCE EDWARD ISLAND		Blue Mountains	1,775
Highest point on the Island, Queens County (46°20' 63°27')	465	Osler Bluff	1,725
NOVA SCOTIA		Caledon Mountain	1,400
Highest point, Cape Breton (46°42' 60°36')	1,747	High Hill	1,163
Franeys Mountain	1,405	Mount Nemo	1,000
Nutty Mountain (Cobequid)	1,204	MANITOBA	
Dalhousie Mountain (Cobequid)	1,115	Baldy Mountain	2,729
NEW BRUNSWICK		Porcupine Hills	2,700
Mount Carleton	2,690	Riding Mountain	2,000
Moose Mountain	1,325	SASKATCHEWAN	
QUEBEC		Cypress Hills	4,567
Mont D'Iberville (Torngat Mountains)	5,210	Wood Mountain	3,325
Appalachian Mountains		Vermilion Hills	2,575
Mont Jacques-Cartier (Shickshock Mountains)	4,160	ALBERTA	
Mount Richardson	3,887	Mount Columbia	12,294
Mount Albert District		The Twins	12,250
Albert Sud Summit	3,775	Mount Alberta	11,874
Mount Logan	3,725	Mount Assiniboine	11,870
Mont Mégantic	3,625	Mount Forbes	11,852
Albert Nord Summit	3,554	Mount Temple	11,626
Matawees Mountain	3,525	Mount Lyell	11,550
		Mount Hungabee	11,550
		Snow Dome	11,550
		Mount Kitchener	11,500

1.2 Principal heights in each province (concluded)

Province and height	Elevation <i>ft</i>	Province and height	Elevation <i>ft</i>
ALBERTA (concluded)		BRITISH COLUMBIA (concluded)	
Mount Athabasca	11,452	Mount Sir Alexander	10,740
Mount King Edward	11,400	Fresnoy Mountain	10,730
Mount Brazeau	11,386	Mount Gordon	10,550
Mount Victoria	11,365	Mount Stephen	10,495
Stutfield Peak	11,320	Cathedral Mountain	10,464
Mount Joffre	11,316	Odaray Mountain	10,350
Deltaform Mountain	11,235	The President	10,297
Mount Lefroy	11,230	Mount Laussedat	10,035
Mount Alexandra	11,214		
Mount Sir Douglas	11,174	YUKON TERRITORY	
Mount Woolley	11,170	St. Elias Mountains	
Lunette Peak	11,150	Mount Logan	19,850
Mount Hector	11,148	Mount St. Elias	18,008
Diadem Peak	11,060	Mount Lucania	17,147
Mount Edith Cavell	11,033	King Peak	16,971
Mount Fryatt	11,026	Mount Steele	16,644
Mount Chown	10,930	Mount Wood	15,885
Mount Wilson	10,700	Mount Vancouver	15,700
Clearwater Mountain	10,420	Mount Hubbard	15,015
Mount Coleman	10,286	Mount Walsh	14,780
Eiffel Peak	10,101	Mount Alverstone	14,565
Pinnacle Mountain	10,062	McArthur Peak	14,253
		Mount Augusta	14,070
BRITISH COLUMBIA		Mount Kennedy	13,905
Vancouver Island Ranges		Mount Strickland	13,818
Golden Hinde	7,219	Mount Newton	13,811
Mount Albert Edward	6,828	Mount Cook	13,760
Mount Arrowsmith	5,962	Mount Craig	13,250
Coast Mountains		Mount Malaspina	12,750
Mount Waddington	13,104	Mount Badham	12,625
St. Elias Mountains		Mount Seattle	10,082
Fairweather Mountain	15,300		
Mount Root	12,860	NORTHWEST TERRITORIES	
Monashee Mountains		Arctic Islands	
Mount Begbie	8,963	Baffin	
Storm Hill	5,300	Penny Ice Cap	6,750
Selkirk Mountains		Mount Thule	5,614
Mount Sir Sandford	11,555	Cockscomb Mountain	5,330
Mount Dawson	11,123	Barnes Ice Cap	3,685
Adamant Mountain	11,009	Knife Edge Mountain	2,493
Grand Mountain	10,842	Banks	
Iconoclast Mountain	10,666	Durham Heights	2,400
Rogers Peak	10,546	Devon	
Purcell Mountains		Ice Cap	6,300
Mount Farnham	11,343	Ellesmere	
Mount Karnak	11,100	Barbeau Peak, highest point in	
Columbia (Cariboo) Mountains		Arctic Islands	8,584
Sir Wilfrid Laurier	11,300	Commonwealth Mountain	7,250
Rocky Mountains		Mount Jeffers	6,250
Mount Robson	12,972	Mount Wood	4,750
Mount Clemenceau	12,001	Mount Cheops	4,750
Mount Goodsir	11,750	Victoria	
Mount Bryce	11,507	Shaler Mountains	2,150
The Helmet	11,250	Mount Bumpus	1,650
Resplendent Mountain	11,240	Mainland	
Mount King George	11,226	Mount Sir James MacBrien	9,062
Whitehorn Mountain	11,139	Franklin Mountains	
Mount Huber	11,051	Cap Mountain	5,175
Mount Freshfield	10,945	Mount Clark	4,798
Mount Mummary	10,918	Pointed Mountain	4,610
Mount Vaux	10,891	Nahanni Butte	4,579
Mount Ball	10,865	Richardson Mountains	
Bush Mountain	10,850	Mount Goodenough	3,219
Mount Geikie	10,843		

1.3 Elevations, areas and depths of the Great Lakes

Lake	Elevation <i>ft</i>	Length <i>miles</i>	Breadth <i>miles</i>	Maximum depth <i>ft</i>	Total area <i>sq miles</i>	Area on Canadian side of boundary <i>sq miles</i>
Superior	602	350	160	1,330	31,700	11,100
Michigan	580	307	118	923	22,300	—
Huron	580	206	183	750	23,000	13,900
St. Clair	574	26	24	21	430	268
Erie	572	241	57	210	9,910	4,930
Ontario	246	193	53	802	7,340	3,880

1.4 Elevations and areas of principal lakes¹ (exceeding 150 sq miles), by province

Province and lake	Elevation ft	Area sq miles	Province and lake	Elevation ft	Area sq miles
NEWFOUNDLAND AND LABRADOR			SASKATCHEWAN (concluded)		
Ashuanipi	1,735	231	Montreal	1,608	176
Atikoniak	1,700	167	Peter Pond	1,382	300
Grand	284	208	Pinehouse	1,262	156
Joseph	1,700	174	Primrose	1,964	173
Melville	tidal	1,185	Reindeer ^a	1,106	2,568
Michikamau	1,510	784	Scott	1,458	152
Lobstick	1,500	197	Tazin	1,130	151
Ossokmanuan Reservoir	1,570	322	Wollaston	1,306	1,035
Smallwood Reservoir	1,545	2,500 ^a			
NOVA SCOTIA			ALBERTA		
Bras d'Or	tidal	424	Bistcho	1,812	165
			Claire	700	555
			Lesser Slave	1,892	451
QUEBEC			BRITISH COLUMBIA		
Albanel	1,276	172	Atlin ^a	2,190	299
Bienville	1,400	482	Babine	2,332	191
Cabonga Reservoir	1,185	262	Kootenay	1,745	157
Dozois Reservoir	1,135	156	Ootsa	2,800	156
Eau Claire	790	534	Williston	2,180	680
Evans	792	211			
Gouin Reservoir	1,325	606	YUKON TERRITORY		
Kaniapiskau	1,850	182	Kluane	2,563	158
Leaf	tidal	175			
Lower Seal	860	223	NORTHWEST TERRITORIES		
Manouane	1,620	226	Aberdeen	261	425
Minto	550	294	Amadjuak	370	1,203
Mistassini	1,220	902	Angikuni	842	197
Payne	425	206	Artillery	1,196	213
Pipmuacan	1,300	378	Aubry	845	151
Saint-Jean	321	387	Aylmer	1,230	327
Sakami	640	229	Baker	8	729
ONTARIO			Bluenose	1,828	155
Abitibi ^a	868	360	Buffalo	870	237
Big Trout	698	255	Clinton Colden	1,230	284
Lake of the Woods ^a (total			Colville	805	176
1,679) Canadian part 1,216	1,060	1,216	Contwoyto	1,460	370
Nipigon	855	1,872	De Gras	1,365	244
Nipissing	644	321	Des Bois	975	181
Rainy (total 360)			Dubawnt	774	1,480
Canadian part 286	1,108	286	Ennadai	1,020	263
St. Joseph	1,218	190	Eskimo North	5	324
Sandy	906	203	Eskimo South	5	243
Seul	1,170	640	Faber	699	170
Simcoe	718	287	Ferguson	35	227
Trout (English River)	1,294	160	Garry	487	377
			Great Bear	512	12,096
			Great Slave	513	11,031
MANITOBA			Hall	21	190
Cedar	830	522	Hazen	520	209
Cross	679	292	Hottah	592	354
Dauphin	853	201	Kamilukuak	874	245
Gods	585	444	Kaminak	173	232
Granville	848	189	Kaminuriak	302	212
Island	744	472	Kasba	1,102	518
Manitoba	813	1,799	Keller	810	152
Molson	724	154	La Martre	870	686
Moose	838	528	Mac Alpine	578	173
Oxford	612	155	Mackay	1,415	410
Playgreen	711	254	Mallery	520	185
Sipiwek	601	176	Netilling	95	2,140
Southern Indian	835	868	Netsilik	26	151
Winnipeg	713	9,417	Nonacho	1,045	303
Winnipegosis	830	2,075	Nueltin ^a	911	880
			Point	1,229	271
SASKATCHEWAN			Princess Mary	380	202
Amisk	964	166	Selwyn ^a	1,306	277
Athabasca ^a	700	3,064	Snowbird	1,177	195
Black	922	179	South Henik	604	198
Churchill	1,382	216	Tebesjuak	480	222
Cree	1,597	554	Takiyuak	1,250	417
Deschambault	1,063	209	Tathlina	920	221
Doré	1,506	248	Tehek	437	186
Frobisher	1,381	199	Trout	1,650	195
Île à la Crosse	1,380	151	Tulemalu	916	258
La Ronge	1,193	546	Wholdaia	1,195	262
			Yathkyed	461	559

Areas given are for mean water levels. All elevations are in feet above mean sea level.

^aExcludes Great Lakes, see Table 1.3.

^aSpans provincial or territorial boundary. Listed under province or territory containing larger portion. Area given is total area.

1.6 Areas of major islands, by region

Region and island	Area sq miles	Region and island	Area sq miles
Baffin Island	195,928	HUDSON BAY AND HUDSON STRAIT	
QUEEN ELIZABETH ISLANDS		Southampton	15,913
Ellesmere	75,767	Coats	2,123
Devon	21,331	Mansel	1,228
Axel Heiberg	16,671	Akimiski	1,159
Melville	16,274	Flaherty	612
Bathurst	6,194	Nottingham	530
Prince Patrick	6,119	Resolution	392
Ellef Ringnes	4,361	Vansittart	385
Cornwallis	2,701	Akpatok	349
Amund Ringnes	2,029	Salisbury	311
Mackenzie King	1,949	Big	310
Borden	1,079	White	305
Cornwall	872	Loks Land	162
Eglinton	595		
Graham	532	PACIFIC COAST	
Lougheed	505	Vancouver	12,079
Byam Martin	444	Graham	2,436
Ile Vanier	435	Moresby	1,007
Cameron	409	Princess Royal	869
Meighen	369	Pitt	531
Brock	295	Banks	382
King Christian	249	King	312
North Kent	228	Porcher	201
Emerald	212	Nootka	197
Alexander	187	Aristazabal	162
Massey	167	Gilford	148
Little Cornwallis	159	Hawkesbury	141
ARCTIC ISLANDS SOUTH OF		Hunter	140
QUEEN ELIZABETH ISLANDS		Calvert	127
Victoria	83,896	Texada	116
Banks	27,038	Swindle	110
Prince of Wales	12,872	McCauley	106
Somerset	9,570	Louise	106
King William	5,062	Quadra	104
Bylot	4,273		
Prince Charles	3,676	ATLANTIC COAST	
Stefansson	1,723	Newfoundland and Labrador	
Richards	836	Newfoundland (main island)	42,031
Air Force	664	South Aulatsivik	176
Wales	439	Killinek	104
Rowley	421	Fogo	98
Russell	363	Random	96
Jens Munk	355	New World	73
Langley and Ellice	301	Tunungayualok	72
Bray	266	West Okak	69
Foley	246	Paul	69
Royal Geographical Society Islands	235	Gulf of St. Lawrence	
Silleem	186	Cape Breton	3,981
Matty	184	Anticosti	3,066
Spicer Islands	177	Prince Edward	2,184
Koch	177	Boularderie	74
Jenny Lind	162	Shippegan	58
Prescott	159	Bay of Fundy	
Crown Prince Frederick	155	Grand Manan	53

1.7 Temperature and precipitation data for typical stations in various districts

District and station	Temperatures (Fahrenheit)						Precipitation		
	Mean Jan.	Mean July	Highest on record	Lowest on record	Av. dates of freezing temperatures (32°F or lower)		Total (all forms) <i>in.</i>	Snowfall <i>in.</i>	Av. number of days (all forms)
					Last in spring	First in autumn			
NEWFOUNDLAND									
Island									
Belle Isle	14.7	48.9	73	-31	June 21	Sept. 26	35.16	94.5	149
Gander A	21.1	61.7	96	-17	June 4	Oct. 5	42.45	139.7	204
St. Andrew's	25.6	59.0	81	-11	June 3	Sept. 24	43.79	77.3	176
St. John's A	25.2	59.5	87	-10	June 3	Oct. 12	59.50	143.2	210
Labrador									
Cartwright	8.4	55.2	97	-36	June 20	Sept. 9	37.26	170.8	179
Goose A	2.6	60.5	100	-38	June 6	Sept. 17	34.52	161.1	176
MARITIME PROVINCES									
Prince Edward Island									
Charlottetown A	19.9	65.2	94	-18	May 17	Oct. 15	44.40	120.1	169
Nova Scotia									
Annapolis Royal	25.0	65.0	91	-17	May 19	Oct. 2	47.42	85.9	149
Halifax	26.3	65.0	94	-13	May 1	Nov. 1	51.92	83.0	152
Sydney A	24.0	64.3	95	-13	May 23	Oct. 16	52.78	113.4	179
Yarmouth A	27.2	61.5	86	-6	May 2	Oct. 24	50.52	80.5	157

1.7 Temperature and precipitation data for typical stations in various districts (continued)

District and station	Temperatures (Fahrenheit)						Precipitation		
	Mean Jan.	Mean July	Highest on record	Lowest on record	Av. dates of freezing temperatures (32°F or lower)		Total (all forms) in.	Snowfall in.	Av. number of days (all forms)
					Last in spring	First in autumn			
MARITIME PROVINCES (concluded)									
New Brunswick									
Chatham A	15.2	66.6	100	-31	May 22	Sept. 21	41.38	121.8	152
Grand Falls	10.6	65.0	98	-46	May 24	Sept. 21	40.22	104.4	105
Moncton A	17.7	65.5	99	-26	May 23	Sept. 23	43.27	123.5	156
Saint John A	19.3	62.8	94	-28	May 18	Oct. 2	50.66	80.6	149
QUEBEC									
Northern									
Fort Chimo A	-10.1	52.5	90	-52	June 27	Aug. 30	19.05	93.2	155
Inoucdjouac (Port Harrison)	-12.4	48.1	86	-51	July 1	Sept. 4	14.00	48.4	133
Nitchequon	-9.3	56.5	90	-57	June 13	Sept. 13	30.09	112.1	192
Schefferville A	-8.9	54.6	89	-59	June 18	Aug. 31	28.44	132.1	188
Southern									
Bagotville A	3.8	64.1	96	-46	May 26	Sept. 18	36.87	134.5	177
Montreal McGill	16.0	70.9	97	-29	Apr. 22	Oct. 23	39.33	95.7	164
Pointe au Pere	12.3	59.7	90	-33	May 19	Sept. 28	33.41	112.5	135
Quebec A	11.1	66.6	96	-33	May 18	Sept. 28	42.85	128.6	164
Sept Îles A	7.0	59.2	90	-46	May 30	Sept. 17	42.92	166.6	146
Sherbrooke	14.7	68.1	98	-42	May 12	Sept. 27	38.29	96.3	170
ONTARIO									
Northern									
Kapuskasing A	-0.8	62.4	97	-48	June 13	Sept. 5	34.31	126.7	186
Sioux Lookout A	-1.6	65.1	96	-51	May 29	Sept. 20	29.19	93.2	165
Thunder Bay A	5.4	63.5	96	-42	May 31	Sept. 10	29.07	87.4	141
Trout Lake	-11.4	60.7	96	-54	June 11	Sept. 16	23.51	83.6	158
Southern									
London A	21.2	68.9	98	-25	May 9	Oct. 6	36.40	79.2	165
Ottawa A	12.3	69.2	100	-33	May 11	Oct. 1	33.50	84.9	152
Parry Sound	14.9	66.8	100	-42	May 14	Oct. 2	40.16	116.8	158
Toronto	24.1	71.3	105	-27	Apr. 20	Oct. 30	31.10	55.5	134
Windsor A	24.3	72.1	101	-15	Apr. 29	Oct. 20	32.91	40.8	137
PRAIRIE PROVINCES									
Manitoba									
Churchill A	-17.7	53.6	91	-49	June 22	Sept. 12	15.61	72.4	141
The Pas A	-8.3	64.3	98	-57	May 28	Sept. 20	17.70	61.9	128
Winnipeg A	-0.9	67.5	105	-49	May 25	Sept. 21	21.06	51.7	121
Saskatchewan									
Regina A	0.9	66.0	110	-58	May 27	Sept. 12	15.66	45.2	114
Saskatoon A	-1.7	65.8	104	-54	May 27	Sept. 15	13.88	44.3	103
Swift Current A	6.9	65.7	102	-45	May 28	Sept. 19	15.34	48.7	112
Alberta									
Beaverlodge CDA	5.2	60.0	98	-54	May 22	Sept. 7	17.90	72.3	129
Calgary A	12.3	61.7	97	-49	May 28	Sept. 12	17.21	60.6	113
Edmonton Ind.A	5.5	63.5	94	-55	May 14	Sept. 19	17.58	52.0	121
Medicine Hat A	10.2	68.4	108	-51	May 17	Sept. 20	13.69	47.9	89
BRITISH COLUMBIA									
Pacific Coast and Coastal Valleys									
Estevan Point	40.1	56.9	84	7	Apr. 5	Nov. 18	119.21	13.5	203
Langara	36.5	54.3	78	6	Apr. 3	Nov. 26	65.97	24.1	248
Prince Rupert	35.3	56.4	90	-6	Apr. 19	Nov. 5	95.06	44.5	227
Vancouver	36.3	63.4	92	0	Mar. 31	Oct. 30	42.05	20.6	161
Victoria									
Gonzale Hts	39.3	60.2	95	4	Feb. 28	Dec. 9	25.87	12.9	142
Southern Interior									
Glacier	11.6	57.9	98	-32	June 12	Sept. 6	58.77	381.7	192
Kamloops A	21.2	69.6	103	-35	May 5	Sept. 28	10.26	30.3	90
Penticton A	26.7	68.2	105	-17	May 10	Oct. 1	11.66	27.2	100
Princeton A	17.4	63.6	107	-45	June 3	Sept. 12	14.13	61.8	115
Central Interior									
Barkerville	14.3	54.1	96	-52	June 29	Aug. 18	45.23	228.9	185
McBride	15.6	60.6	100	-50	June 9	Sept. 1	20.65	77.7	128
Prince George A	10.7	58.9	94	-58	June 10	Aug. 28	24.43	91.9	162
Smithers A	12.9	58.2	93	-47	June 10	Sept. 1	20.17	77.7	158
Northern Interior									
Atlin	2.2	54.6	87	-58	June 5	Aug. 28	11.15	47.8	86
Dease Lake	-2.8	54.7	93	-60	June 29	Aug. 13	15.53	73.5	143
Fort Nelson A	-9.8	62.1	98	-61	May 24	Sept. 5	17.57	75.4	130
Fort St. John A	1.0	60.6	92	-53	May 20	Sept. 9	17.71	81.2	128
Smith River A	-12.1	57.4	92	-74	June 21	Aug. 11	18.32	83.3	148
YUKON TERRITORY									
Dawson	-19.5	59.9	95	-73	May 26	Aug. 27	12.81	53.7	120
Snag A	-18.7	57.0	89	-81	June 18	Aug. 9	14.16	55.3	118
Watson Lake A	-13.6	58.9	93	-74	May 30	Sept. 3	17.01	89.5	153
Whitehorse A	-2.0	57.3	94	-62	June 5	Sept. 1	10.24	50.3	118

1.7 Temperature and precipitation data for typical stations in various districts (concluded)

District and station	Temperatures (Fahrenheit)				Av. dates of freezing temperatures (32°F or lower)		Precipitation		
	Mean Jan.	Mean July	Highest on record	Lowest on record			Total (all forms) in.	Snowfall in.	Av. number of days (all forms)
					Last in spring	First in autumn			
NORTHWEST TERRITORIES									
Mackenzie Basin									
Fort Good Hope	-23.8	60.7	94	-68	June 3	Aug. 19	11.17	48.8	101
Fort Simpson A	-17.7	61.0	93	-64	May 31	Aug. 29	13.51	54.3	126
Hay River A	-13.9	60.1	93	-55	June 6	Sept. 11	13.38	65.0	109
Barrens									
Baker Lake	-28.5	51.3	82	-58	June 25	Aug. 31	8.38	35.0	96
Chesterfield	-25.3	47.6	86	-60	June 29	Sept. 6	10.37	44.4	98
Coppermine	-21.0	48.8	90	-58	June 27	Aug. 21	8.51	40.1	110
Arctic Archipelago									
Clyde	-16.4	40.2	72	-50	July 13	July 18	8.12	60.2	94
Eureka	-33.9	41.9	67	-64	June 27	Aug. 5	2.30	15.1	52
Frobisher Bay A	-15.1	46.3	76	-50	June 30	Aug. 29	16.34	97.2	135
Mould Bay	-28.9	38.6	60	-65	July 12	July 19	3.40	23.6	73
Resolute A	-26.6	39.7	65	-62	July 10	July 20	5.37	31.0	94

A = Airport, Ind. A = Industrial Airport.
CDA = Canada Department of Agriculture.

1.8 Total area classified by tenure, 1973 (sq miles)

Item	Province or territory					
	Nfld.	PEI	NS	NB	Que.	Ont.
Federal Crown lands other than national parks, Indian reserves and forest experiment stations	168	5	69	572	474 ¹	445
National parks	903	7	514	167	303	742
Indian reserves	—	3	44	65	300	2,588
Federal forest experiment stations	—	—	—	35	1	40
Privately owned land or land in process of alienation from the Crown	6,842	2,011	14,665	15,339	43,500	45,967
Provincial or territorial lands other than provincial parks and provincial forests	148,048	108	987	11,015	468,804	346,637
Provincial parks	107	5	21	83	75,000	16,163
Provincial forests	117	45	5,125	1,078	6,478	—
Total area	156,185	2,184	21,425	28,354	594,860	412,582
	Man.	Sask.	Alta.	BC	YT and NWT	Canada
Federal Crown lands other than national parks, Indian reserves and forest experiment stations	100	2,240	1,172	345	1,488,198 ²	1,493,788
National parks	1,149	1,496	20,692 ³	1,811	22,280 ⁴	50,064
Indian reserves	827	2,196	2,549	1,309	2	9,883
Federal forest experiment stations	—	—	23	—	—	99
Privately owned land or land in process of alienation from the Crown	55,891	95,581	100,794	20,935	93	401,618
Provincial or territorial lands other than provincial parks and provincial forests	184,233 ⁵	13,807	118,431	211,738	1,406 ⁶	1,505,214
Provincial parks	3,385	1,857	2,357	13,349	—	112,327
Provincial forests	5,415	134,523	9,267	116,768	—	278,816
Total area	251,000	251,700	255,285	366,255	1,511,979	3,851,809

¹Includes Gatineau Park (137.5 sq miles) and Quebec Battlefields Park (0.36 sq mile) which are under federal jurisdiction but are not technically national parks.
²Includes 2,860 sq miles set aside but not yet designated as a national park under the National Parks Act.
³Includes that part of Wood Buffalo Park in Alberta (13,840 sq miles).
⁴Includes that part of Wood Buffalo Park in Northwest Territories (3,460 sq miles).
⁵Includes 2,812 sq miles under lease.
⁶Federal Crown lands transferred to the administration of the Yukon Territory and Northwest Territories encompassing established communities.

Sources

1.1, 1.2, 1.6 Topographical Survey Directorate, Surveys and Mapping Branch, Department of Energy, Mines and Resources.
1.3, 1.4 *Inventory of Canadian freshwater lakes*, Inland Waters Directorate, Water Resources Branch, Department of the Environment.
1.5, 1.7 Information Services Branch, Department of the Environment.
1.8 Property Services Branch, Department of Public Works and respective provincial government departments.

Chapter 2

The Constitution and the legal system

As the society of a country becomes more highly developed, the body of law, in response to the changing needs of its citizens, becomes more complex. This Chapter attempts to show some of the features of the Canadian legal system, particularly those which have a federal concern. The Canadian Constitution, the major written aspects of which are contained in the British North America Act, is considered in some detail, followed by a discussion of the distribution of legislative power between the federal and provincial governments. There are also short notes on the Canadian legal system, the development of Canadian criminal law, the courts and the judiciary, the legal profession and the federal legal aid scheme. There is a description of the organization and work of the federal Department of Justice. Information concerning the enforcement of the criminal law and on correctional institutions is set out in the concluding sections.

2.1 The Constitution

The Canadian federal state of 10 provinces and two territories, as we know it today, had its foundation in an Act of the British Parliament, the British North America Act, 1867, which was fashioned for the most part from the Seventy-two Resolutions drafted by the Fathers of Confederation at Quebec in 1864. That Act provided for the federal union of the three British North American Provinces — Canada (Ontario and Quebec), Nova Scotia and New Brunswick — into one Dominion under the name Canada. The country that was brought into existence on proclamation of the BNA Act on July 1, 1867 consisted of only four of its present provinces, Ontario, Quebec, New Brunswick and Nova Scotia. However, Section 146 of the Act made provision for the possible future entry into Confederation of the colonies or provinces of Newfoundland, Prince Edward Island and British Columbia, and of Rupert's Land and the North-Western Territory, a vast expanse of territory then held by the Hudson's Bay Company. In 1870, the Company surrendered its territories to the British Crown which transferred them at once to Canada. In exchange it received a cash payment from the Canadian government of £300,000, one-twentieth of the lands in the southern part, "the fertile belt", of the territory, and designated blocks of land around its trading posts. From this new territory was carved the province of Manitoba in 1870 which was much smaller at its inception than at present, and later, in 1905, the provinces of Saskatchewan and Alberta. British Columbia entered Confederation in 1871 on the condition that a railway linking it with eastern Canada be commenced within two years. Despite the original provision in the BNA Act for their entry into Canada, it wasn't until 1873 that Prince Edward Island entered the Union, and much later, 1949, that Newfoundland became part of Canada (see Table 2.1).

Although the BNA Act of 1867 and its amendments contain a substantial portion of Canada's Constitution, and is popularly referred to as the Constitution, it is not a comprehensive constitutional document presenting an exhaustive statement of fundamental laws and rules by which Canada is governed. There are unwritten parts which are of equal importance such as common law, convention and usage which were transplanted from Great Britain over 200 years ago and which are fundamental to the Canadian style of democratic government. Among these are the principles governing the Cabinet system of responsible government with its close identification and functioning of executive and legislative branches.

The Constitution of Canada, in its broadest sense, also includes other British statutes (Statute of Westminster — 1931) and British Orders in Council (those admitting various provinces and territories to the federation); statutes of the Parliament of Canada pertaining to such matters as succession to the Throne, the Royal Style and Title, the Governor General, the Senate, the House of Commons, the creation of courts, the franchise and elections; as well as judicial decisions that interpret the BNA Act and other statutes of a constitutional nature. Moreover, the constitutions of the provinces of Canada form part of the over-all Canadian Constitution, and provincial acts which are of a fundamental constitutional nature similar to

those listed above would also be considered part of the Constitution. The same can be said of both federal and provincial Orders in Council that are of a similar fundamental nature.

Although the essential principles of Cabinet government are based on custom or constitutional usage, the federal structure of Canadian government rests on the explicit written provisions of the BNA Act. Apart from the creation of the federal union, the dominant feature of the Act, and indeed of the Canadian federation, was the distribution of powers between the central or federal government on the one hand and the component provincial governments on the other. In brief, the primary purpose was to grant to the Parliament of Canada legislative jurisdiction over all subjects of general or common interest, while giving to the provincial legislatures jurisdiction over all matters of local or particular interest.

Unlike the written constitutions of many nations, the BNA Act lacks comprehensive "bill of rights" clauses, although it does accord specific constitutional protection to the use of the English and French languages (Sect. 133) and special safeguards with respect to sectarian or denominational schools. Freedom of speech, freedom of assembly, freedom of religion, freedom of the press, trial by jury and similar liberties enjoyed by the individual citizen are not recorded in the BNA Act but rather depended on the statute law and the common law inheritance until these rights were confirmed, as far as federal law is concerned, by the passage of a Canadian Bill of Rights — An Act for the Recognition and Protection of Human Rights and Fundamental Freedoms (SC 1960, c.44) assented to August 10, 1960.

The right to use either the English or the French language in the House of Commons, the Senate or the federal courts is constitutionally guaranteed by Section 133 of the BNA Act. The use of the English and French languages in the administration of the Government of Canada is dealt with in the Official Languages Act (RSC 1970, c.O-2). That Act provides that government notices to the public, certain orders and regulations, and final decisions of federal courts are to be made or issued in both languages and that, in the National Capital Region and in federal bilingual districts, government services are to be available in both languages. The Commissioner of Official Languages for Canada is responsible for ensuring compliance with this Act.

Amendment of the Constitution. No provision was made in the BNA Act of 1867 for its amendment by any legislative body in Canada but both the Parliament of Canada and the provincial legislatures were given legislative jurisdiction with respect to some matters relating to government. Thus, for example, the Parliament of Canada was given jurisdiction with respect to the establishment of electoral districts and election laws and the privileges and immunities of members of the House of Commons and the Senate. Each provincial legislature was empowered to amend the Constitution of its province except as regards the office of Lieutenant Governor. Amendments to the BNA Act have been made by the British Parliament on 14 occasions since 1867. By an amendment to the BNA Act passed in 1949, the authority of the Parliament of Canada to legislate with respect to constitutional matters was considerably enlarged and it may now amend the Constitution of Canada except as regards the legislative authority of the provinces, the rights and privileges of provincial legislatures or governments, schools, the use of the English or the French language and provides that no House of Commons shall continue for more than five years other than in time of real or apprehended war, invasion or insurrection.

The search for a satisfactory procedure for amending the Constitution totally within Canada which satisfies the need to safeguard basic provincial and minority rights and yet possesses sufficient flexibility to ensure that the Constitution can be altered to meet changing circumstances has been the subject of repeated consideration in the Parliament of Canada as well as in a series of federal-provincial conferences and meetings held in 1927, 1935-36, 1950 and 1960-61. In October 1964 the text of a draft bill "to provide for the amendment in Canada of the Constitution of Canada", which embodied an amending procedure or formula, recommended by a Conference of Attorneys General, was unanimously accepted by a Conference of the Prime Minister and the Premiers. However, Quebec subsequently withdrew its approval of the formula and it was never adopted.

Between February 1968 and June 1971, eight federal-provincial conferences were held to study the drafting of a new Constitution. A committee of officials was established to provide assistance in the study of constitutional questions. The provincial governments, with one ex-

ception, and the federal government submitted proposals for a new Constitution. The discussions culminated in the drafting of the Canadian Constitutional Charter, 1971, which set out specific constitutional reforms, including a revised amendment procedure. The Charter was considered at the Constitutional Conference in Victoria, BC in June 1971, but was not accepted.

Treaty-making powers. The federal government has exclusive responsibility for the conduct of external affairs. The policy of the federal government in discharging this responsibility is to promote the interest of the entire country and of all Canadians.

In matters of specific concern to the provinces, it is the policy of the Canadian government to do its utmost to assist them in achieving their particular aspirations and goals. The attitude of the federal government in this respect was illustrated by the "entente" signed by representatives of Quebec and France in the field of education in February 1965. Provincial and federal authorities co-operated actively in a procedure that enabled Quebec, within the framework of the Constitution and the national policy, to participate in international arrangements in a field of particular interest to that province.

Thus, under existing procedures, once it is determined that what a province wishes to achieve through agreements in the field of provincial jurisdiction falls within the framework of Canadian foreign policy, the provinces may discuss detailed arrangements direct with the competent authorities of the country concerned. When a formal international agreement is to be concluded, however, the federal powers relating to the signature of treaties and the conduct of over-all foreign policy must necessarily come into operation.

2.2 Distribution of federal and provincial powers

Inasmuch as the purpose of the BNA Act was to create a federal system of government, some of the most important provisions of that document deal with the division of powers between the federal and provincial governments. These powers cover the whole area of government in Canada and each level of government is sovereign with respect to the powers it exercises. Hence, provincial governments, when acting within their jurisdiction as set out in the BNA Act, are as sovereign as the federal government when acting within its spheres of power.

The primary scheme of the distribution of powers between the federal and provincial governments was to grant to the federal government jurisdiction over all subjects of general or national concern while giving to provincial legislatures jurisdiction over all matters of a local nature. Section 91 of the BNA Act lists federal powers. It gives the Parliament of Canada a general power to "make laws for the peace, order and good government of Canada" and then gives a list of classes of subjects over which Parliament has exclusive authority which illustrate but do not restrict the general power. The list contains 31 classes of federal powers such as regulation of trade and commerce, defence, currency, raising money by any mode or system of taxation, postal services, navigation and shipping, weights and measures and criminal law. Section 92 assigns specific areas of power to the provinces including the power to legislate regarding direct taxation within the province, the management and sale of public lands and timber belonging to the province, municipal institutions, laws relating to property and civil rights and all matters of a merely local nature. (For details see *1973 Canada Year Book* pp 71-73.) Section 95 of the BNA Act gave the federal government and the provinces concurrent powers over agriculture and immigration but federal law prevails in cases where the laws of both levels of government are in conflict.

The drafters of the BNA Act in 1867 probably thought that such a division of powers was so definite and precise that no future difficulties would arise in deciding what subjects were under federal legislative control and what subjects were under provincial legislative control. However, the powers enumerated in Sections 91 and 92 are not mutually exclusive and sometimes overlap. As a result, the interpretation to be placed on the division of powers between the federal and provincial governments has given rise to innumerable legal disputes, parliamentary discussions, royal commission inquiries and federal-provincial conferences. Often, however, the division of powers has remained unclear.

Difficulty in interpreting the division of powers has also arisen as a result of new social, technological and political conditions that, naturally, were unforeseen at the time of Confederation. Social welfare legislation, such as unemployment insurance, and legislation concerning modern communication facilities were not contemplated by the drafters of the BNA

Act. Nevertheless, power to legislate on these subjects had to be assigned either to the federal or provincial governments by reference to the BNA Act. Canada's emergence into the international community as a completely independent nation, which also was not foreseen in 1867, required bringing new concepts such as Canadian citizenship into the BNA Act and assigning responsibility for them to one of the levels of government.

One significant outcome of the allocation of powers under the BNA Act has been that the expenditures of the provincial governments have outstripped their tax resources. In 1867, the provinces were assigned responsibility for social services such as hospitals and schools as well as for municipal institutions. At that time these responsibilities did not involve major expenditures of public funds. However, changing demands of society and the consequent entry of governments into fields of social welfare have led to the expenditure of large sums for these purposes. The provinces have power to levy "direct taxation within the province" while the federal government has a broader authority to levy taxes by "any means of taxation". The federal government has exercised its broad taxing powers and therefore has substantial tax resources. On the other hand, while the provinces have responsibility for public institutions which are costly to operate, they do not have sufficient fiscal resources for these purposes. In order to redress this imbalance, numerous federal-provincial tax-sharing agreements and shared-cost programs have been entered into by the federal and provincial governments. Such agreements were of course not contemplated by the original drafters of the BNA Act. Nevertheless those agreements have resulted in new constitutional arrangements and techniques for dealing with federal-provincial economic relations which have come to be known collectively as "co-operative federalism".

2.3 The legal system

2.3.1 Common law and Quebec civil law

With one exception, in all the provinces as well as in the two territories, the legal system derives from the common law system of England. The exception is Quebec where the system has been influenced by the legal developments of France. Quebec has its own Civil Code and Code of Civil Procedure. Over the years, both Canadian common law and Quebec civil law have developed unique characteristics. The body of law changes as society changes. In many of the provinces there are now Law Reform Commissions which have been charged with the function of inquiring into matters relating to the reform of the law having regard to both the statute law and the common law. A general revision of the Civil Code is taking place in Quebec under the auspices of the Civil Code Revision Office. At the federal level there is the Law Reform Commission of Canada whose purpose is "to study and keep under review on a continuing basis the statutes and other laws comprising the law of Canada with a view to making recommendations for their improvement, modernization and reform".

2.3.2 Criminal law

Criminal law is that branch or division of law which treats of crimes and their punishment. A crime may be described as an act against society, as distinct from a dispute between individuals. It has been defined as any act done in violation of those duties which an individual owes to the community and for the breach of which the law has provided that the offender shall make restitution to the public.

The criminal law of Canada has as its foundation the criminal common law of England built up through the ages and consisting first of customs and usages and later expanded by principles enunciated by generations of judges. There is no statutory declaration of the introduction of English criminal law into those parts of Canada that are now New Brunswick, Nova Scotia and Prince Edward Island. Its introduction there depends upon a principle of the common law itself by which English law was declared to be in force in uninhabited territory discovered and planted by British subjects, except in so far as local conditions made it inapplicable. The same may be said of Newfoundland although the colony dealt with the subject in a statute of 1837. In Quebec, its reception depends upon a Royal Proclamation of 1763 and the Quebec Act of 1774. In each of the other provinces and in the Yukon Territory and Northwest Territories, the matter has been dealt with by statute.

The judicial systems of the provinces as they exist today are based on the British North America Act of 1867. Section 91 of the Act provides that "The exclusive legislative authority

of the Parliament of Canada extends to . . . the criminal law, except the constitution of courts of criminal jurisdiction but including the procedure in criminal matters". By Section 92(14), the legislature of the province exclusively may make laws in relation to "the Administration of Justice in the Province, including the Constitution, Maintenance, and Organization of Provincial Courts, both of Civil and Criminal Jurisdiction and including Procedure in Civil Matters in those Courts". The Parliament of Canada may, however (Sect. 101), establish any additional courts for the better administration of the laws of Canada. It should be noted that the Statute of Westminster, 1931 effected important changes, particularly by abrogating the Colonial Laws Validity Act, 1865 (Br.) and confirming the right of a Dominion to make laws having extraterritorial operation.

At the time of Confederation each of the colonies affected had its own body of statutes relating to the criminal law. In 1869, in an endeavour to assimilate them into a uniform system applicable throughout Canada, Parliament passed a series of acts, some of which dealt with offences of special kinds and others with procedure. Most notable of the latter was the Criminal Procedure Act, but other acts provided for the speedy trial or summary trial of indictable offences, the powers and jurisdiction of justices of the peace in summary conviction matters and otherwise, and the procedure in respect of juvenile offenders.

Codification of the criminal law through a Criminal Code Bill founded on the English draft code of 1878, Stephen's *Digest of criminal law*, Burbridge's *Digest of the Canadian criminal law*, and the relevant Canadian statutes was brought about by the Minister of Justice, Sir John Thompson, in 1892. This Bill became the Criminal Code of Canada and came into force on July 1, 1893. It must be remembered, however, that the criminal code was not exhaustive of the criminal law. It was still necessary to refer to English law in certain matters of procedure and it was still possible to prosecute for offences at common law. Moreover, Parliament has declared offences against certain other acts, e.g. the Narcotic Control Act, to be criminal offences.

An examination and study of the criminal code was authorized by Order in Council dated February 3, 1949, and the Commission which had been assigned the task of revising the code presented its report with a draft bill in February 1952. After coming before successive sessions of Parliament it was finally enacted on June 15, 1954 and the new Criminal Code SC 1953-54, c.51 (now RSC 1970, c.C-34) came into effect on April 1, 1955. Since the new code came into force a number of important amendments have been made. These include an amendment in 1956 providing that motions for leave to appeal to the Supreme Court of Canada in criminal cases should be heard by a quorum of at least five judges of that Court instead of by a single judge; amendments effected in 1959, providing a statutory extension of the definition of "obscenity" and making provision for seizure and condemnation of offending material without a charge necessarily being laid against any person; extensive amendments relating to the allowing of time for payment of fines; amendments dealing with offences committed in aircraft in flight over the high seas; and an amendment forbidding the publication in a newspaper or broadcast of a report that any admission or confession tendered in evidence at a preliminary inquiry or a report of the nature of such admission or confession unless the accused has been discharged or, if the accused has been committed for trial, the trial has ended. (In 1969 a new amendment laid down that the accused may apply to the magistrate or justice holding a preliminary inquiry for an order forbidding publication of any of the evidence until the accused has been discharged or the trial itself has ended.)

It is most important to note that in 1960 (SC 1960, c.44) Parliament enacted what is known as the Canadian Bill of Rights. Although the Act sets out further details, its general scope appears in Section 1, which reads as follows: "It is hereby recognized and declared that in Canada there have existed and shall continue to exist without discrimination by reason of race, national origin, colour, religion or sex, the following human rights and fundamental freedoms, namely, (a) the right of the individual to life, liberty, security of the person and enjoyment of property, and the right not to be deprived thereof except by due process of law; (b) the right of the individual to equality before the law and the protection of the law; (c) freedom of religion; (d) freedom of speech; (e) freedom of assembly and association; and (f) freedom of the press."

Although the Bill of Rights has been invoked on various occasions, the courts have not held it to affect the operation of the criminal code.

In 1961 the offence of murder was divided into capital and non-capital, the death penalty was abolished in relation to the offence of non-capital murder, and the term “criminal sexual psychopath” was dropped and the term “dangerous sexual offender” substituted; in 1965 provision was made for the right to appeal in habeas corpus proceedings.

The concept of “non-capital murder” was introduced into Canadian criminal law in 1961. At that time, capital murder was defined to include, for example, planned and deliberate murder, murder in the course of certain violent acts and murder of peace officers and prison officers. Life imprisonment was substituted for the death penalty in cases where the accused was convicted of non-capital murder.

In 1966 the House of Commons, in a free vote, rejected a bill under which the death penalty for murder would have been completely abolished. The next year, in 1967, an Act was passed under which the definition of capital murder was restricted to the murder of police officers or prison officers. This Act was brought into force on December 29, 1967, and continued in force for a period of five years from that day. The Act then expired and was replaced by one brought into force on January 1, 1974. The new Act retains the 1967 restrictive definition of capital murder, this time using the term “murder punishable by death”, for a period of four years ending December 31, 1977.

Some very comprehensive amendments to the criminal code are contained in the Criminal Law Amendment Act which was assented to on June 27, 1969 and, with certain exceptions, came into force on August 26, 1969. Among the changes were amendments relating to gaming and lotteries, “drinking and driving”, homosexual acts and therapeutic abortion. It also affected the law relating to the publication of evidence, as mentioned above, as well as the law relating to the issue of fitness to stand trial on the grounds of insanity.

In 1971 Parliament passed the Bail Reform Act which changed the criminal code by restricting police power of arrest for minor offences and requiring the police, as a general rule, to release persons arrested for minor or less serious offences as soon as possible. In addition, a justice is required to issue a summons unless the public interest requires a warrant of arrest. Save in very exceptional cases “cash bail” was abolished and, as a general rule, a person charged with an offence will be released simply on his written undertaking to attend court.

In 1972 the Criminal Law Amendment Act introduced a wide variety of reforms. Rules regarding jury duty were changed and men and women were made equally eligible and responsible to serve. The possibility of more flexible and appropriate law enforcement was enhanced by providing that individuals accused of certain kinds of crimes, such as obstructing the police, could be tried either by summary conviction or indictment. New offences were created with regard to hijacking and endangering the safety of aircraft, to soliciting for the purpose of prostitution by either male or female and to disturbing the peace of an apartment building. The offences of vagrancy and attempted suicide were abolished. Important changes were introduced with respect to sentencing — maximum sentences were increased for certain crimes connected with the administration of justice, whipping was abolished, and provision was made to permit a judge not to sentence an accused found guilty if the public interest would not be served by sentencing him. Provision was made to permit jail sentences under 90 days to be served at night and on weekends so that the individual might continue to earn a living and support his family. Where an accused is found guilty of certain minor offences, the Court, where it feels it is in the best interests of the accused and is not contrary to the public interest, may order that the accused be discharged either absolutely or upon conditions prescribed in a probation order. Speaking generally, a discharged accused is deemed not to have been convicted. However, should an accused conditionally discharged subsequently be convicted of an offence, the Court may revoke the discharge and convict him of the offence to which the discharge relates.

2.4 Courts and the judiciary

2.4.1 The federal judiciary

The Parliament of Canada is empowered by Section 101 of the British North America Act from time to time to provide for the constitution, maintenance and organization of a general Court of Appeal for Canada and for the establishment of any additional courts for the better administration of the laws of Canada. Under this provision, Parliament has established the Supreme Court of Canada, the Federal Court of Canada and certain miscellaneous courts.

Supreme Court of Canada. This Court, first established in 1875 and now governed by the Supreme Court Act (RSC 1970, c.S-19), consists of a chief justice, who is called the Chief Justice of Canada, and eight puisne judges. The Chief Justice and the puisne judges are appointed by the Governor in Council and hold office during good behaviour but are removable by the Governor General on address of the Senate and the House of Commons. They cease to hold office on attaining the age of 75 years. The Court sits at Ottawa and exercises general appellate jurisdiction throughout Canada in civil and criminal cases. The Court is also required to consider and advise on questions referred to it by the Governor in Council and it may also advise the Senate or the House of Commons on private bills referred to the Court under any rules or orders of the Senate or of the House of Commons.

Appeals may be brought from any final judgment of the highest court of final resort in a province in any case where the amount or value of the matter in controversy exceeds the sum of \$10,000. An appeal may be brought from any other final judgment with leave of the highest court of final resort in the province; if such court refuses to grant leave, the Supreme Court of Canada may grant leave to appeal. The Supreme Court may grant leave to appeal from any judgment whether final or not. Appeals in respect of indictable offences are regulated by the criminal code. Appeals from federal courts are regulated by the statute establishing such courts. The judgment of the Supreme Court of Canada in all cases is final and conclusive.

Chief Justice and Judges of the Supreme Court of Canada as at December 31, 1973

Chief Justice of Canada, Rt. Hon. Mr. Bora Laskin (*Appointed December 27, 1973, first appointed a Judge of the Supreme Court, March 23, 1970*)

Hon. Mr. Justice Ronald Martland (*appointed January 15, 1958*)

Hon. Mr. Justice Wilfrid Judson (*appointed February 5, 1958*)

Hon. Mr. Justice Roland Almon Ritchie (*appointed May 5, 1959*)

Hon. Mr. Justice Wishart Flett Spence (*appointed May 30, 1963*)

Hon. Mr. Justice Louis-Philippe Pigeon (*appointed September 21, 1967*)

Hon. Mr. Justice Robert George Brian Dickson (*appointed March 26, 1973*).

Federal Court of Canada. The Federal Court of Canada was constituted by Act of the Parliament of Canada under Section 101 of the British North America Act, 1867, which, after authorizing the creation of the Supreme Court of Canada, confers on the Parliament of Canada authority to constitute other courts for the better administration of the laws of Canada. The Federal Court of Canada is a court of law, equity and admiralty and it is a superior court of record having civil and criminal jurisdiction (Sect. 3 of the Act). It was established in 1875 as the Exchequer Court of Canada, which it replaced in December 1970 (SC 1970-71, c.1).

The Court has two divisions called the Federal Court — Appeal Division, and the Federal Court — Trial Division. The Appeal Division may be called the Court of Appeal or Federal Court of Appeal (Sect. 4 of the Act). The Court of Appeal consists of the Chief Justice of the Federal Court of Canada and five other judges. The Trial Division consists of the Associate Chief Justice of the Federal Court of Canada and nine other judges. Every judge is an ex officio member of the Division of which he is not a regular member (Sect. 5). In addition to the establishment of full-time judges, an added capacity to cope with the purely judicial work of the Court is provided by the authority to invite retired federally appointed judges to act as Deputy Judges of the Court (Sect. 10). This authority extends also to federally appointed judges who are still in office, but only with the consent of the appropriate Chief Justice or Attorney General. Former District Judges in Admiralty are also Deputy Judges of the Court and their services can be utilized on a limited basis (Sect. 60(3)).

Provision is also made in the Act for quasi-judicial officers called Prothonotaries (Sect. 12). Their duties are defined by the Rules and may be of a judicial nature (Sect. 46(1)(h)). In addition to being taxing-masters, they can, subject to supervision by the Court, deal with interlocutory work, and even take trials in minor matters as the Associate Chief Justice may find expedient in order to ensure the expeditious dispatch of the Court's business.

While all the full-time judges must reside in or near the National Capital Region (Sect. 7), each Division of the Court can sit any place in Canada and the place and time of the sittings must be arranged to suit the convenience of the litigants (Sects. 15 and 16). In addition, there is authority in the statute (Sect. 7(2)) for a rota of judges to provide for a continuity of judicial availability in any place where the volume of work, or other circumstances, makes such an arrangement expedient.

Judges of the Federal Court of Canada as at December 31, 1973

Chief Justice, Hon. Wilbur Roy Jackett (*first appointed to Exchequer Court, May 4, 1964—changed to Federal Court, June 1, 1971*)

Associate Chief Justice, Hon. Camilien Noël (*first appointed to Exchequer Court, March 12, 1962—changed to Federal Court, June 1, 1971*)

Court of Appeal Judges: Hon. Mr. Justice Arthur Louis Thurlow (*appointed August 29, 1956—June 1, 1971*), Hon. Mr. Justice Louis Pratte (*appointed January 25, 1973, first appointed to Trial Division, June 10, 1971*), Hon. Mr. Justice John James Urie (*appointed April 19, 1973*)

Trial Division Judges: Hon. Mr. Justice Angus Alexander Cattanach (*appointed March 27, 1962—June 1, 1971*), Hon. Mr. Justice Hugh Francis Gibson (*appointed May 4, 1964—June 1, 1971*), Hon. Mr. Justice Allison Arthur Mariotti Walsh (*appointed July 1, 1964—June 1, 1971*), Hon. Mr. Justice Roderick Kerr (*appointed November 1, 1967—June 1, 1971*), Hon. Mr. Justice Darrel Verner Heald (*appointed June 30, 1971*), Hon. Mr. Justice Francis Urquhart Collier (*appointed September 16, 1971*), Hon. Mr. Justice Patrick Morgan Mahoney (*appointed September 13, 1973*), Hon. Mr. Justice Raymond G. Decary (*appointed September 13, 1973*), Hon. Mr. Justice George Arthur Addy (*appointed September 17, 1973*)

Deputy Judges of the Federal Court of Canada: Hon. Mr. Justice Robert S. Furlong, Hon. Mr. Justice James D. Higgins, Hon. Mr. Justice Dalton C. Wells.

Miscellaneous courts. The Railway Act, 1903 (RSC 1970, c.R-2) established the Board of Railway Commissioners for Canada as a court of record; by the Transport Act, 1938 (RSC 1970, c.T-14) the name was changed to the Board of Transport Commissioners for Canada, and by the National Transportation Act, 1967 (RSC 1970, c.N-17) to the *Canadian Transport Commission*. This court exercises jurisdiction with respect to transport matters under the Railway Act and the National Transportation Act, and with respect to telegraph and telephone matters under the Railway Act. The Governor in Council is given jurisdiction to vary or rescind any order of the Commission and an appeal lies from the Commission to the Supreme Court of Canada on a question of jurisdiction or of law.

By virtue of Section 91(21) of the British North America Act, 1867, Parliament has exclusive legislative jurisdiction in relation to bankruptcy and insolvency. By the Bankruptcy Act (RSC 1970, c.B-3) the superior courts of the provinces are constituted *bankruptcy courts*; original jurisdiction is conferred upon the trial courts and appellate jurisdiction is conferred upon the appeal courts of the provinces.

The Tax Review Board, created in 1949 as the Income Tax Appeal Board and later changed to the Tax Appeal Board, now operates under the Tax Review Board Act 1970 (SC 1970-71, c.11). The Board is a court of record and has jurisdiction to hear appeals by taxpayers against their assessment under the Income Tax Act and also appeals under the Estate Tax Act, the Old Age Security Act and certain sections of the Canada Pension Plan. An appeal lies from the Board to the Federal Court of Canada and a further appeal from that Court to the Supreme Court of Canada.

The Court Martial Appeal Court was established in 1959 by an amendment to the National Defence Act (RSC 1970, c.N-4). The judges of the Court are not fewer than four judges of the Federal Court of Canada designated by the Governor in Council and such additional judges of a superior court of criminal jurisdiction as are appointed by the Governor in Council. The Governor in Council designates one of the judges to be president of the Court. The Court hears appeals from courts martial respecting the legality of a finding of guilty on any charge and the legality of a sentence passed by a court martial. An appeal lies from the Court Martial Appeal Court to the Supreme Court of Canada on a question of law only.

The Immigration Appeal Board was established in 1967 by the Immigration Appeal Board Act (RSC 1970, c.I-3). The Board is a court of record, with broad discretionary powers to permit the temporary or permanent admission of individuals, notwithstanding contrary provisions of the Immigration Act. The establishing Act provides for the operation of the Board and in particular for the legal and administrative processes involved in appeals by individuals against deportation, detention and the refusal of admission of sponsored relatives ordered under the provisions of the Immigration Act or Regulations. An appeal lies to the Federal Court of Canada and, on leave, to the Supreme Court of Canada.

2.4.2 The provincial judiciary

Certain provisions of the British North America Act govern to some extent the provincial judiciary. Under Section 92(14) the legislature of each province exclusively may make laws in relation to the administration of justice in the province including the constitution, mainte-

nance and organization of provincial courts of both civil and criminal jurisdiction. Section 96 provides that the Governor General shall appoint the judges of the superior, district and county courts in each province, except those of the courts of probate in Nova Scotia and New Brunswick.

2.4.3 The territorial judiciary

In 1971 amendments [now cited as RSC 1970, c.48 (1st Supp.)] to the Yukon Act and the Northwest Territories Act were proclaimed in force, simultaneously with certain ordinances of the Yukon Territory and the Northwest Territories, allowing the territorial governments to assume responsibility for the administration of justice other than the conduct of criminal prosecutions.

In the Yukon Territory, provision was made for a Territorial (now Supreme) Court, a Magistrate's Court, justices of the peace and a Court of Appeal. The Supreme Court consists of a single judge of superior court rank and the Magistrate's Court. Both are located in Whitehorse, although from time to time Magistrate's Court sittings are held in other communities. There are 32 justices of the peace, appointed by the Commissioner, located at 15 points in the Territory. The Judge of the Supreme Court of the Northwest Territories is ex officio Judge in the Yukon Territory and vice versa. The Court of Appeal consists of the Chief Justices of British Columbia, the Justices of Appeal of British Columbia and the Judge of the Supreme Court of the Northwest Territories.

The court system in the Northwest Territories consists of a superior court called the Supreme Court of the Northwest Territories, presided over by one judge located in Yellowknife. The Court of Appeal of the Territories consists of the Justices of Appeal of Alberta and the judges of the Yukon Territory and Northwest Territories Supreme Courts. There are also two full-time magistrates appointed by the Commissioner who have jurisdiction similar to provincial judges; a number of justices of the peace, also appointed by the Commissioner, serve in widely scattered settlements in the Territories.

2.4.4 Salaries, allowances and pensions of judges

Section 100 of the British North America Act provides that the "Salaries, Allowances, and Pensions of the Judges of the Superior, District, and County Courts (except the Courts of Probate in Nova Scotia and New Brunswick) and of the Admiralty Courts in Cases where the Judges thereof are for the Time being paid by Salary, shall be fixed and provided by the Parliament of Canada". These are provided under the Judges Act (RSC 1970, c.J-1 as amended by SC 1970-71, c.55).

The salary of the Chief Justice of Canada is \$47,000 per annum and those of the puisne judges of the Supreme Court of Canada, \$42,000. The salaries of the Chief Justice and the Associate Chief Justice of the Federal Court of Canada are \$39,000 per annum and of the other judges of the Federal Court, \$35,000. The salaries of deputy judges of the federal courts, who are judges of other superior courts and were formerly district judges in admiralty pursuant to the Admiralty Act, which was repealed (admiralty jurisdiction now being provided for by the Federal Court Act), are as follows: Ontario, \$1,500 and Newfoundland three judges at \$333.33 each.

All Chief Justices of provincial superior courts, the Senior Associate Chief Justice and the Associate Chief Justice of the Superior Court of Quebec receive annual salaries of \$39,000; the puisne judges of these courts and the judges of the two territorial courts receive \$35,000 per annum. Where judicial offices are created for supernumerary judges, the incumbents will receive \$35,000 a year. Supernumerary judges are those judges of a superior court of a province who have given up their regular judicial duties to hold themselves available to perform such special judicial duties as may be assigned to them from time to time by the Chief Justice or Associate Chief Justice of the court of which they are a member. The chief judges of county and district courts receive salaries of \$27,000 per annum and the remaining judges and junior judges of all county and district courts, \$25,000 per annum.

Every judge who is in receipt of a salary under the Judges Act is paid an additional salary of \$3,000 per annum as compensation for any extra-judicial services that he may be called upon to perform by the Government of Canada or the government of a province, and for the incidental expenditures that the fit and proper execution of his office as judge

may require. In the case of each judge of the Federal Court of Canada and of the territorial courts of the Yukon Territory and the Northwest Territories an additional allowance of \$2,000 per annum is paid as compensation for special incidental expenditures inherent in the exercise of his office as judge.

The Judges Act provides that a judge of a superior or county court who, for the purpose of performing any function or duty as such judge, attends at any place other than that at which or in the immediate vicinity of which he is by law obliged to reside, is entitled to be paid, as a travelling allowance, his moving or transportation expenses and reasonable travelling and other expenses incurred by him in so attending. If a judge uses his personal automobile because of the lack of good public transportation facilities, he is paid a mileage allowance.

Judges' annuities are non-contributory and the statutory retirement age is 75 years except for judges of the Federal Court of Canada who cease to hold office at the age of 70 and judges of the county courts who are compulsorily retired at 70. Those judges of the county courts who held office at the time the retirement age was reduced to 70 years (1971) are not affected by the earlier retirement age but are allowed to serve as judges until they reach 75 years of age, the retirement age in force previously. The Governor in Council may grant an annuity to: a judge who has continued in judicial office for at least 15 years and has attained the age of 65, if he resigns his office; a judge who has continued in judicial office for at least 15 years, if he resigns his office and in the opinion of the Governor in Council the resignation is conducive to the better administration of justice or is in the national interest; a judge who has become afflicted with some permanent infirmity disabling him from the due execution of his office, if he resigns his office or if, by reason of such infirmity, he is removed from office; or a judge who ceases to hold office because he has attained the age of retirement, if he has held judicial office for at least 10 years. The amount of the annuity may not exceed two thirds of the salary annexed to the office held at the time of resignation, removal or ceasing to hold office, as the case may be. An annuity granted to a judge commences on the day of his resignation, removal or ceasing to hold office and continues during his natural life.

The Governor in Council may grant to the widow of a judge who dies while in office an annuity not exceeding two ninths of the salary of the judge at the date of his death, to commence immediately after the death of the judge and to continue thenceforth during her natural life. The Governor in Council may also grant to each of a maximum of four dependent children of a judge who dies while holding office or of a judge who is in receipt of an annuity under the Judges Act, an annuity equal to one fifth of the annuity payable to his widow, or if the judge dies without leaving a widow or such widow is dead, two fifths of the annuity that would have been payable to the judge's widow. When a judge who was granted an annuity upon his retirement dies, the Governor in Council may grant to the widow an annuity not exceeding one third of the annuity that was granted to him. Two ninths of salary and one third of annuity are the same amount in dollars. An annuity granted to the widow of a judge ceases upon her remarriage. No annuity may be granted if the widow married the judge after he ceased to hold office.

2.5 Legal services

2.5.1 The legal profession

The adjective "fused" is sometimes used to describe the legal profession in common law Canada since practising lawyers are both called as barristers and admitted as solicitors. Admission to practise is a provincial matter. Statutes setting out the powers and responsibilities of the provincial organizations are: (Alberta) The Legal Profession Act RSA 1970, c.203 as am.; (British Columbia) The Legal Professions Act RSBC 1960, c.214 as am.; (Manitoba) The Law Society Act RSM 1970, c.L-100; (New Brunswick) The Barristers' Society Act, 1973, SNB 1973, c.80; (Newfoundland) The Law Society Act RSN 1970, c.201 as am.; (Nova Scotia) Barristers and Solicitors Act RSNS 1967, c.18 as am.; (Ontario) The Law Society Act RSO 1970, c.238; (Prince Edward Island) The Legal Profession Act RSPEI 1951, c.84 as am.; (Saskatchewan) The Legal Profession Act RSS 1965, c.301 as am.; (Northwest Territories) The Legal Profession Ordinance RONWT 1956, c.57 as am.; (Yukon) The Legal Profession Ordinance ROY 1971, c.L-4 as am. In Quebec the legal profession is divided into the separate branches of advocate and notary and their statutes are the Bar Act, SQ 1966/67, c.77 as am. and the Notarial Act, SQ 1968, c.70.

2.5.2 Legal aid

For many years the provision of legal services to persons unable to afford the fees normally charged by a lawyer was viewed as a responsibility to be assumed by individual lawyers on a voluntary basis as a form of charity. In more recent times most of the provincial governments have moved to establish publicly funded legal aid programs under which persons of limited means are able to obtain the services of a lawyer in a number of criminal and civil matters at either no cost or modest cost to themselves depending upon the client's financial circumstances. The lawyers who act for clients in matters covered by a provincial legal aid program are then paid by the government, usually at a reduced rate, on a fee for services basis or as a salary depending upon the type of legal aid program operated in the province. The provincial legal aid programs vary considerably in terms of formalities, scope of coverage and methods of providing the legal services. Some are established by legislative enactment while others exist and operate by way of informal agreements between the provincial government and the law society. Some programs provide for fairly comprehensive coverage in both criminal and civil matters while others at present encompass only criminal offences. Again, some plans operate on a fee for services basis whereas others rely partially or mainly on the services of state salaried lawyers. In some provinces a mixed system is in operation.

In 1971 the federal government entered the field and concluded an agreement with the government of the Northwest Territories for sharing the costs of providing legal aid in both criminal and civil matters for persons in the Territories financially unable to retain the services of a lawyer. This comprehensive legal aid program was implemented on August 17, 1971. In the Yukon Territory the legal aid program is at present a service operated by the territorial bar with the government paying the fees to lawyers who act for legal aid clients charged with criminal offences.

In August 1972, the federal government announced that it was prepared to enter agreements with the provincial governments under which federal funds would be paid to the provinces to assist them in developing or expanding their legal aid programs in matters related to criminal law. Agreements have now been concluded with the governments of British Columbia, Alberta, Manitoba, Ontario, Quebec, New Brunswick, Nova Scotia, Prince Edward Island and Newfoundland. Under the agreements, the federal government will contribute up to 50 cents per capita of the provincial population toward the costs of providing lawyers' services to eligible persons subject to criminal charges or proceedings under federal laws. These federal-provincial agreements enable the provincial governments to determine the method or methods by which legal services will be provided to persons who qualify for assistance, but in cases where an individual is charged with a criminal offence carrying a penalty of capital punishment or life imprisonment that person is entitled to retain a lawyer of his or her own choice. The agreements also ensure that a person otherwise eligible to receive legal aid will not be disqualified as a recipient only because he or she is not a resident of the province in which the criminal proceedings take place.

2.6 The federal Department of Justice

The Department of Justice of the Government of Canada is divided, for administrative and functional purposes, into a number of sections. Lawyers working for the Department are assigned to the sections, or as legal advisers to other government departments, or to the regional offices in Vancouver, Edmonton, Winnipeg, Toronto, Montreal and Halifax. The sections within the Department, each headed by a director, are described below.

Advisory and international law. The lawyers in this section deal with work in the areas of public and private international law. Canada became a member of the Hague Conference on Private International Law in 1968 and the Department is responsible for Canadian participation in the Conference. This section co-ordinates Canadian activities in relation to the Conference, which meets every other year, and it has a similar role with regard to Unidroit, the International Institute for the Unification of Private Law. In both public and private international law this section has a particular interest in matters concerning the countries of the British Commonwealth.

Civil law. This section conducts litigation and provides legal advice for the government on all matters of a non-criminal nature arising in the province of Quebec.

Civil litigation. The lawyers in this section are responsible for the conduct of the non-criminal litigation involving the Government of Canada originating in those provinces where the common law prevails. This litigation includes customs and excise tax matters, expropriation cases, disputes over contracts, accident claims, suits for defamation and claims for breach of copyright.

Constitutional law. This section is responsible for co-ordinating the advisory work of the Department in the field of constitutional law. It is also concerned with long-term policy in constitutional affairs and with problems of federal-provincial relations.

Criminal law. The lawyers in this section participate in criminal litigation in every jurisdiction. They work in co-operation with members of the Department's six regional offices in the prosecution of violations of federal statutes and regulations and are involved in the extradition of persons to and from Canada. An additional and very important function is the work on criminal law amendment which involves considering and assessing the suggestions for the amendment of the criminal code and certain other statutes received from many sources. The section advises the Minister of Justice with respect to these recommendations.

Jurimetrics. This section has responsibility for work and research involving the use of the computer in legal research and in solving legal problems. Its personnel co-operate with the other departmental sections in computer-assisted programs and activities.

Legal research and planning handles matters involving the law in federal areas which do not seem to fit into the work traditionally handled by the other sections in the Department. The legal work on privacy, and research into the question of a federal human rights commission were carried out in this section.

Legislation. The work of this section is concerned with the preparation of legislation from the time a topic is given approval in principle by Cabinet until the resulting enactment receives Royal Assent. The periodic revisions of the *Statutes of Canada* are also compiled here as are the office consolidations of certain acts which are prepared in the periods between major revisions.

Privy Council. This section is responsible for the examination of what is sometimes called subordinate legislation. From time to time Parliament delegates certain legislative functions to other bodies and officials and it is the responsibility of this section to consult with the Clerk of the Privy Council in order to maintain general supervision over the legislative product resulting from this delegation and to consider whether it is within the authority conferred by Parliament (see Statutory Instruments Act, 1970-71, c.38). The section is asked to assume responsibility for the actual drafting of certain subordinate legislation. Lawyers in this section also act as legal advisers to the Clerk of the Privy Council and his staff.

The property and commercial law section handles all the work involved when land is required for public purposes.

Tax litigation. The lawyers in this section represent the Crown in all aspects of most federal tax litigation. The section has also an advisory function on tax matters with the Department of National Revenue.

Central Divorce Registry. This Registry was established with the enactment of the 1968 Divorce Act. All divorces and petitions for divorce are recorded.

Regional and departmental services section looks after the staffing and other needs of the six regional offices and of the departmental offices where lawyers from the Department of Justice are assigned. There are legal officers from the Department of Justice in almost all of the government departments and agencies in Ottawa.

A booklet entitled *Department of Justice*, describing in detail the work of the sections, is available free upon request to the Department. It was written for recruitment purposes in 1972 and most of the information in it is still current.

2.7 Police forces

2.7.1 Organization of police forces

The police forces of Canada are organized in three groups: (1) the federal force, which is the Royal Canadian Mounted Police; (2) provincial police forces — Ontario and Quebec have

their own provincial police forces but all other provinces engage the services of the Royal Canadian Mounted Police to perform parallel functions within their borders; and (3) municipal police forces — most urban centres of reasonable size maintain their own police forces or engage the services of the provincial police, under contract, to attend to police matters. In addition, the Canadian National Railways, the Canadian Pacific Railway Company and the National Harbours Board have their own police forces.

The Royal Canadian Mounted Police. The Royal Canadian Mounted Police is a civil force maintained by the federal government. It was established in 1873 as the North-West Mounted Police for service in what was then the North-West Territories and, in recognition of its services, was granted the use of the prefix "Royal" by King Edward VII in 1904. Its sphere of operations was expanded in 1918 to include all of Canada west of Thunder Bay and in 1920 it absorbed the Dominion Police, its headquarters was transferred from Regina to Ottawa and its title was changed to Royal Canadian Mounted Police.

The force now operates under authority of the Royal Canadian Mounted Police Act (RSC 1970, c.R-9). It is responsible to the Solicitor General of Canada and is controlled and managed by a Commissioner who holds the rank and status of a Deputy Minister and is empowered under the Act to appoint members to be peace officers in all provinces and territories of Canada.

The administration of justice within the provinces, including the enforcement of the Criminal Code of Canada, is part of the power and duty delegated to the provincial governments. All provinces, except Ontario and Quebec, have entered into contracts with the Royal Canadian Mounted Police to enforce criminal and provincial laws, under the direction of the respective Attorneys General. In addition, in these eight provinces, the force is under agreement to provide police services to 161 municipalities, thereby assuming the enforcement responsibility of municipal as well as criminal and provincial laws within these communities. The Yukon Territory and Northwest Territories are policed exclusively by the Royal Canadian Mounted Police and therefore criminal offences, federal statutes and all ordinances of the territories fall within the ambit of force responsibility. The force maintains liaison officers in London, Paris, Rome, Hong Kong and Washington and represents Canada in the International Criminal Police Organization, which has its headquarters in Paris.

The 12 operational divisions, alphabetically designated, make up the strength of the force across Canada; they comprise 41 subdivisions which include 706 detachments. "Headquarters" Division, as well as the Office of the Commissioner, is located at Ottawa. Divisional headquarters, for the most part, are located in the provincial capitals, except for "C" Division which is in Montreal and "A" and "G" Divisions which are in Ottawa. "Air" Division, also with headquarters in Ottawa, supports the operational divisions by providing transportation and related services. "N" Division in Ottawa and "Depot" Division in Regina are training divisions.

A teletype system links the widespread divisional headquarters with the administrative centre at Ottawa and a network of fixed and mobile radio units operates within the provinces. The focal point of the criminal investigation work of the force is the Directorate of Laboratories and Identification; its services, together with those of divisional and subdivisional units and of six Crime Detection Laboratories, are available to police forces throughout Canada.

The Canadian Police Information Centre at RCMP Headquarters, a duplexed computer system, is staffed and operated by the force. Law enforcement agencies throughout Canada have access via a series of remote terminals to information on stolen vehicles, licences and wanted persons.

The RCMP operates the Canadian Police College at which force members and selected representatives of other Canadian and foreign police forces may study the latest advances in the fields of crime prevention and detection.

As at January 31, 1974 the force had a total strength of 15,253 including regular members, special constables, civilian members and Public Service employees.

Ontario Provincial Police. The Ontario Provincial Police, a Crown force, is the third largest deployed force on the North American continent, having a total authorized strength of more than 5,000 (1973) uniformed and civilian personnel.

The OPP is administered from general headquarters at Toronto by a Commissioner, under the Ministry of the Solicitor General. Other senior executive officers include two Deputy Commissioners and six Assistant Commissioners. The force has two principal sides — Operations and Services — which are administered by the Deputy Commissioner Operations and the Deputy Commissioner Services, respectively. In turn, six divisions at the next level — Field, Traffic, Administration, Staff Services, Special Services, and Personnel — are administered by their respective Assistant Commissioners. Specialized branches under the Special Services Division include Auto Theft, Criminal Investigation, Anti-rackets, Security, Intelligence, and Special Investigations.

For policing and administration purposes, the province is divided geographically into 17 districts. In the field, there are 185 detachments controlled through 17 district headquarters located at Chatham, London, Burlington, Niagara Falls, Downsview, Mount Forest, Barrie, Peterborough, Belleville, Perth, Long Sault, North Bay, Sudbury, Sault Ste. Marie, South Porcupine, Thunder Bay and Kenora. Twelve municipalities are policed under special contract.

Under provisions of the Ontario Police Act, the force is responsible for: (1) enforcing federal and provincial statutes in those areas that are not required to maintain their own police department; (2) maintaining a traffic patrol on the more than 10,000 miles of King's Highways and 65,000 miles of secondary county and township roads; (3) enforcing the Liquor Licence Act and the Liquor Control Act for Ontario; (4) maintaining a Criminal Investigation Branch and other specialized branches to assist all other forces in the investigation of major crimes; and (5) assisting other forces by providing additional manpower in the event of emergencies.

Under the Staff Services Division, the Central Records and Communications Branch offers 24-hour seven-day-week service to all police departments in Ontario on such matters as criminal records, fingerprint records, dry-cleaning and laundry mark identification, and stolen and recovered property lists.

The OPP operates one of the largest frequency-modulation radio networks in the world, with 110 fixed radio stations and more than 1,300 radio-equipped mobile units including motorcycles, marine units and aircraft. It also operates the Ontario Provincial Police telecommunications network connecting all 17 districts as well as other police departments on a local, national and international basis. Extensions to routine police service are provided by canine, SCUBA and marine-bush rescue units strategically located throughout the province and available to other law-enforcement agencies upon request.

The year 1974 will see the first recruitment of women in the force's 65-year history. Regular constable recruitment of both men and women will permit qualified young persons to make a career in a long-established police force. Ranking officers from inspector, up to and including Commissioner, receive the Queen's Commission in the same manner as members of the Armed Forces.

Quebec Police Force. Under the authority of the Attorney General, the Quebec Police Force is responsible for maintaining peace, order and public safety throughout the province, and for prevention and investigation of criminal offences and violations of provincial law. The Force is under the command of a director general and four assistant directors-general with support services provided by a comptroller-general of personnel and communications. The Force, with headquarters in Montreal, is divided into five services: planning, personnel and communications, administration, operations and technical.

For police purposes, the province is divided into eight districts each under the command of a Chief Inspector or an Inspector. *Bas St-Laurent* District, including the sections of Chandler, Rimouski and Baie Comeau, has 18 detachments; *Saguenay-Lac St-Jean*, six detachments; *Quebec*, including the sections of Québec-Nord, Québec-Sud, and Rivière-du-Loup, 24 detachments; *La Mauricie*, nine detachments; *L'Estrie*, six detachments; *Montreal*, including the sections of Joliette, Montreal, Saint-Jean, and Arctic Quebec, 28 detachments; *Outaouais* and *Nord-Ouest*, eight detachments each. Strength of the Quebec Police Force at the end of 1973 was 4,004 officers, non-commissioned officers and constables and 862 civilian employees.

Municipal police forces. Provincial legislation makes it mandatory for cities and towns to furnish adequate municipal policing for the maintenance of law and order in their communities. Also, all villages and townships or parts of townships having a population density and a real

property assessment sufficient to warrant maintenance of a police force, and having been so designated by Order in Council, are responsible for adequate policing of their municipalities.

2.7.2 Uniform crime reporting

The present method of reporting police statistics (police administration, crime and traffic enforcement statistics), known as the Uniform Crime Reporting Program, was started on January 1, 1962. The program was developed by the (then) Dominion Bureau of Statistics in co-operation with the Canadian Association of Chiefs of Police Committee on Uniform Crime Reporting.

As shown in Table 2.2 police personnel in Canada numbered 53,532 at the end of 1972, including 43,762 sworn-in policemen; 9,224 other full-time employees serving as clerks, technicians, artisans, commissionaires, guards, special constables, etc. and 546 cadets. The ratio of police personnel per 1,000 population was 2.4 and the ratio of police was 2.0. Provincial and territorial ratios for police personnel ranged from 1.4 to 4.2 per 1,000 persons and for police only from 1.3 to 3.3. In 12 selected police metropolitan areas there were 18,915 police personnel including 16,214 police and 2,701 cadets and other full-time employees. Total municipal police personnel numbered 29,815 made up of 27,676 members of municipal forces; 2,093 Royal Canadian Mounted Police and 46 Ontario Provincial Police under municipal contracts.

Three policemen were killed by criminal action during 1972 and five policemen lost their lives accidentally while on duty. Police transport facilities at the end of the year included 9,781 automobiles, 858 motorcycles, 868 other motor vehicles, 437 boats, 26 aircraft, 228 horses and 102 service dogs.

Table 2.3 shows the number of crimes dealt with by the police in 1972 including offences under the criminal code, federal statutes, provincial statutes and municipal by-laws other than traffic; offences cleared by charge and otherwise; and the number of adults and juveniles charged. Offences reported or known to police which investigation proved unfounded are not shown in the table but numbered 97,890 including 79,541 under criminal code classifications; 9,697 under federal statutes; 6,402 under provincial statutes; and 2,250 under municipal by-laws.

During 1972, police reported 98,687 offences against the person including 479 murders, 412 attempted murders, 10,920 rape and other sexual offences, and 86,836 offences of wounding and other assaults (not indecent). All offences against the person resulted in the charging of 34,990 persons, 1,976 of them juveniles. During the year there were 822,055 cases of robbery, breaking and entering, theft, fraud and other offences against property resulting in 155,048 persons charged, 38,365 of them juvenile males and 4,767 juvenile females. There were 2,182 cases of prostitution, 3,124 gaming and betting, 7,529 offensive weapons and 259,407 other criminal code offences. In addition to 39,794 offences under various federal statutes, there were 23,844 under the Narcotic Control Act and 4,975 under the controlled and restricted drug parts of the Food and Drugs Act. These two classifications resulted in the charging of 23,331 persons including 898 juvenile males and 162 juvenile females.

Provincial and territorial fire marshals and commissioners reported 4,200 suspected or known incendiary offences of which 1,149 were proven unfounded after investigation; 603 cases were cleared by charge and 248 cleared otherwise. Charges were laid against 528 adults and 160 juveniles.

There were 69,229 motor vehicles stolen (an estimated 713.6 per 100,000 registered vehicles), 60,496 or 87.4% of these vehicles were recovered. Police were asked to locate 22,031 missing adults and 51,590 missing juveniles of which 20,853 adults and 50,589 juveniles were located. Police reported investigating death by drowning of 1,384 persons.

During 1972, police departments reported 185,013 (163,921 in 1971) criminal code traffic offences resulting in 132,920 (117,114) persons charged, 3,708 (3,271) of them females. Total traffic charges under other federal statutes numbered 5,425 (4,754); 2,012,035 provincial statutes (other than the three selected offences almost identical to those under the criminal code that are shown separately in Table 2.4) (1,821,367 in 1971) and 432,772 (500,707) municipal by-laws excluding parking. Parking violations numbered 5,960,530 (6,044,592).

There were 610,836 (543,457) traffic accidents reported of which 5,345 (4,656) involved fatalities, 139,825 (130,153) resulted in injuries and 465,666 (408,648) involved property damage over \$200 (\$100 in Quebec). There were 6,373 (5,560) persons killed in traffic accidents including 4,858 (4,176) drivers and passengers, 1,276 (1,169) pedestrians, 219 (188) cyclists and 20 (27) others. Persons injured numbered 204,587 (192,701).

2.8 Crime and delinquency

2.8.1 Adult offenders and convictions

Offences may be classified under two headings, “indictable offences” and “offences punishable on summary conviction”. Indictable offences are grouped in two main categories: offences that violate the criminal code and offences against federal statutes. These include the more serious crimes. Offences punishable on summary conviction — those not expressly made indictable — include offences against the criminal code, federal statutes, provincial statutes and municipal by-laws. Increases in the total number of summary conviction offences do not measure adequately the increase in the seriousness of crime. Many summary conviction offences amount to mere disturbances of the peace, minor upsets to public safety, health and comfort such as parking violations, intoxication and practising trades without licence. Nevertheless, summary conviction offences may include more serious charges such as assault and contribution to juvenile delinquency.

Adults convicted of indictable offences. Statistics are available for persons convicted of indictable offences. Thus it is possible to determine the population engaged in prohibited activities and to help in the treatment of anti-social behaviour in terms of subject-centred action. In the present counting system, although individuals may be charged with more than one offence, only one offence is tabulated for each person and is selected according to the following criteria: (1) if the person were tried on several charges, the offence is that for which proceedings were carried to the farthest stage — conviction and sentence; (2) if there were several convictions, the offence is that for which the heaviest punishment was awarded; (3) if the final result of proceedings on two or more charges were the same, the offence is the more serious one, as measured by the maximum penalty allowed by the law; (4) if a person were prosecuted for one offence and convicted of another — for example, charged with murder and convicted of manslaughter — the offence is the one for which the person was convicted.

In 1971 there were 54,098 adults charged with 92,335 indictable offences of whom 47,874 were found guilty of 79,437 offences (see Table 2.5). All data for 1970 and 1971 exclude returns for Quebec and Alberta. It should be noted that figures given in Tables 2.5 - 2.16 are based on information received through the provincial judicial systems and consequently cannot be compared with data reported by police under the Uniform Crime Reporting Program (Tables 2.2 - 2.4) which include these two provinces.

Table 2.6 classifies indictable offences by type of offence for 1970 and 1971. Class I covers offences against the person and in 1971, 5,429 males and 344 females were convicted in this category, mostly for assaults of various kinds. Classes II to IV deal with offences against property. Thefts predominate among the offences in these classes, and breaking and entering, extortion and robbery — serious crimes which involve acts of violence — are the next most numerous. Class V deals with offences relating to currency and Class VI with miscellaneous offences; among the latter, the most numerous convictions are for offences connected with gaming, betting and lotteries. In 1971, 1,766 men and 155 women were convicted under federal statutes of whom 1,340 men and 127 women were offenders under the Narcotic Control Act.

The number of female offenders convicted of indictable offences increased from 6,997 in 1970 to 7,735 in 1971 with Ontario accounting for 4,460 and British Columbia for 1,615 of the total. The ratio of female offenders convicted to total persons convicted increased from 15.3% in 1970 to 16.1% in 1971; the increases ranged from 4.3% in Prince Edward Island to 17.2% in Ontario. Table 2.7 summarizes the most serious court sentences given for indictable offences and Table 2.8 shows the method of trial and disposition of cases.

Two kinds of sentences — probation and commitment to an institution — maintain, for a certain period of time, a relationship between the person dealt with by the court and the legal institutions of a community. There are several types of institutions to which a person can be committed, such as penitentiaries, reformatories, jails and industrial farms. Theoretically, every institution has a specific purpose which is supposed to be taken into account when arriving at a legal decision. In practice, however, the availability of an institution in a given community is a factor in determining the decision rendered by the court.

Young adult offenders (16-24 years). Attention is focused on the needs of the young adult offenders, 16-24 years of age, who constitute a promising group for rehabilitation in modern

reception and diagnostic centres equipped with educational, trade training and other formative disciplines. The young men and women in this age group accounted for 24.0% of the total population 16 years of age and over in 1971 but they formed over half of the criminal population committing indictable offences. The group includes some of the most daring offenders, who already may be experienced criminals, as well as first offenders likely to be turned from crime by further education and training. There were 24,504 young adult offenders in 1971, an increase of 6.0% over the previous year (see Tables 2.9 and 2.10).

Convictions for summary conviction offences. Offences punishable on summary conviction under the criminal code or under the provincial summary conviction Acts as the case may be are triable by magistrates and justices of the peace. Data relating to these offences are based on convictions; no information is available on either the number of persons involved in these offences or the number of charges (see Table 2.11).

Appeals. Appeal is an important safeguard in Canada's legal system. The conviction or the sentence pronounced by a judge of a first instance court may be appealed on the grounds that the verdict was unreasonable, that there was a wrong decision on some question of law or that there was a miscarriage of justice. In 1971 there were 3,735 appeals in indictable cases disposed of by the courts, of which 474 were Crown appeals and 3,261 appeals of the accused. Of the Crown appeals, 135 were from acquittal and 339 from sentence. Appeals in summary conviction cases disposed of by the courts numbered 1,856 in 1971. Of these, 259 were appeals of the informant and 1,597 appeals of the accused. The informant appeals comprised 194 from acquittal and 65 from sentence, and appeals of the accused comprised 1,234 from conviction and 363 from sentence.

2.8.2 Juvenile delinquents

Juvenile delinquent, as defined in the Juvenile Delinquents Act, means any child who violates any provision of the criminal code or of any federal or provincial statute, or of any by-law or ordinance of any municipality, or who is guilty of sexual immorality or any similar form of vice, or who is liable by reason of any other act to be committed to an industrial school, or juvenile reformatory under the provision of any federal or provincial statute. The commission by a child of any of these acts constitutes an offence known as a delinquency. The upper age limit of children brought before the juvenile courts in the provinces varies. The Act defines a child as meaning any boy or girl apparently or actually under the age of 16 years, or such other age as may be directed in any province. In Prince Edward Island, Nova Scotia, New Brunswick, Ontario and Saskatchewan under 16 is the official age; in Alberta under 16 for boys and under 18 for girls; in Newfoundland under 17; in Quebec, Manitoba and British Columbia under 18 years. Up to 1967, it was the practice of Statistics Canada to publish information about juvenile delinquents 16 years of age and over separate from that of juveniles under 16 years of age. From 1967 on, the figures include all those considered as juveniles by the respective provinces, regardless of the differing upper age limits.

Included in the statistics of juvenile delinquents (Tables 2.12 - 2.14) are cases (alleged as well as adjudged) which were brought before the courts and dealt with formally. A case was counted separately each time a child appeared before the court for a new delinquency or delinquencies. In instances where multiple delinquencies were dealt with at one court appearance, only one delinquency — the most serious — was selected for tabulation. Delinquencies reported as informal cases by the courts were not included nor were cases of children presenting conduct problems which were not brought to court or which were dealt with by the police, social agencies, schools or youth-serving agencies. Thus, community facilities for dealing with children's problems may have an influence on the number of cases referred to court and, therefore, an effect on the statistics of juvenile delinquents.

2.9 Correctional institutions

Correctional institutions may be classified under three headings: (1) training schools — operated by the provinces or private organizations under provincial charter for juvenile offenders serving indefinite terms up to the legal age for children in the particular province; (2) provincial adult institutions; and (3) penitentiaries — operated for adult offenders by the federal government in which sentences of over two years are served.

2.9.1 Institutions and training schools

There is a limited amount of statistical information available with respect to correctional institutions (see Table 2.15). "In-custody" figures shown in Table 2.16 for penitentiaries refer only to those persons under sentence, but the figures for admissions include those received from courts as well as by transfer from other penitentiaries and by cancellation of paroles. Figures for releases include expiry of sentences, transfers between penitentiaries, releases on parole, deaths, pardons and releases on court order. In-custody figures for provincial and county institutions may include, in addition to those serving sentences, persons awaiting trial, on remand for sentence or psychiatric examination, awaiting appeal or deportation, any others not yet serving sentence and, for training school population, juveniles on placement.

Population figures in Tables 2.15 and 2.16 are for a given day of the year. These figures represent, in effect, a yearly census of correctional institutions and, as such, are not indicative of the daily average population count. For instance, if an abnormal number of commitments is made to a certain institution on or just prior to the end of the year, the result will be an unrepresentative population total for the institution in that year.

With regard to the fluctuations that might have occurred during the year between census days, the total population of correctional institutions has shown a general increase, however, totals for each type of institution have shown a tendency to level off. The marked decline in training school population is due to the closing of training schools in some provinces.

2.9.2 The Canadian Penitentiary Service

The Penitentiary Service operates under the Penitentiary Act (RSC 1970, c.P-6) and is under the jurisdiction of the Solicitor General of Canada. It is responsible for all federal penitentiaries and for the care and training of persons sentenced or committed to those institutions. The Commissioner of Penitentiaries, under the direction of the Solicitor General, has control and management of the Service and all related matters.

In the fiscal year ended March 31, 1974, the federal penitentiary system consisted of 14 maximum security institutions, nine medium security institutions and 27 minimum security institutions. Maximum security institutions receive inmates sentenced by the courts to imprisonment for terms of from two years to life. These are located at Dorchester, NB; Ste-Anne-des-Plaines and Ville de Laval, Que.; Kingston and Bath, Ont.; Stony Mountain, Man.; Prince Albert, Sask.; Abbotsford and New Westminster, BC.

Medium and minimum security institutions receive inmates transferred from the maximum security institutions on the basis of their suitability for special forms of training including vocational training. Medium security units are located at Springhill, NS; Cowansville and Ville de Laval, Que.; Campbellford and Kingston, Ont.; Drumheller, Alta.; Agassiz and Abbotsford, BC. Minimum security institutions are located at Dorchester, Saint John and Blackville, NB; Halifax, NS; Ville de Laval, Montreal and Ste-Anne-des-Plaines, Que.; Kingston, Gravenhurst, Petawawa, Toronto and Bath, Ont.; Stony Mountain and Winnipeg, Man.; Prince Albert and Regina, Sask.; Edmonton and Calgary, Alta.; Victoria, Agassiz, Vancouver and Mission City, BC.

Some inmates sentenced to penitentiary terms in Newfoundland are held in the provincial centre at St. John's, Nfld. under the provisions of Section 14 of the Penitentiary Act. Exchange of services contracts between the federal government and several of the provinces also provide for exchange of inmates for various reasons, with full-cost recovery agreements.

Headquarters of the Penitentiary Service is located in Ottawa and regional directorates are located in Vancouver, BC, Kingston, Ont. and Ville de Laval, Que. for the western, Ontario and Quebec areas, respectively. Three correctional staff colleges — at Kingston, Ville de Laval and New Westminster — are operated for the training of recruits and for refresher courses for senior penitentiary officers. These staff colleges also provide excellent facilities for service-wide conferences of heads of institutions and other special groups of officers. It is anticipated that the Service will acquire an additional training facility at Edmonton, Alta., in 1974-75. This facility will be adequate to handle a constant flow of 120 to 130 trainees. An additional college might be required in the Atlantic Provinces by 1978.

As at March 31, 1974, 35% of the inmates were in maximum security institutions, 50% in medium security and 15% in minimum security. New institutions have been carefully designed to provide facilities for the rehabilitation of inmates. All afford space for both indoor and outdoor recreation. Some of the old institutions are being brought up-to-date to meet present-day needs and others are being phased out.

Every inmate enters the federal penal system through a regional reception centre or a receiving institution. The prime purpose of the reception centre is to allow a complete diagnosis of each individual inmate, and based upon the results of that diagnosis to place the inmate in the institution within the system that will provide the best mix of training program and degree of security required. Facilities provide for admission in one of three categories: age 21 years and under, age 22 years and over and first offenders, and recidivists. Young or first offenders are segregated from the recidivists. Doctors, psychologists, and social workers examine them for their physical and mental health, abilities, training and need for schooling in order to launch them on a rehabilitation program. The program of the correctional services is directed primarily toward assisting the inmate in every possible way to regain his proper place in society. Better facilities to achieve this are becoming available and the staff involved in the process is highly dedicated. Academic opportunities are provided and inmates attend classes on either a full- or part-time basis. Other students advance their education by correspondence courses offered at the elementary, secondary or university level. In 1973-74, approximately 7,000 inmates participated in adult education and vocational training programs offered by the Penitentiary Service, often with a view to acquiring a trade or profession. Expanded use was made of temporary parole and temporary absence permits to enable students to attend community education facilities; 45 inmate students were attending university, high school or community colleges at year-end. Religious programs are provided for all inmates and between 20% and 50% of them participate in worship services. Most chapels run multi-purpose chapel programs during the week where, besides instruction, other activities related to religious services are carried out. There is active inmate involvement in this section of the program which also includes suitable community participation.

Plans have been finalized to introduce interdisciplinary teams to be responsible for groups of inmates on a living unit basis in institutions other than the five originally selected as pilot institutions. The living unit concept is an attempt to personalize the contacts between staff and inmate, to activate interpersonal relationships so that inmates, many of whom have regarded authority — whether inside or outside institutions — as antagonistic, can learn how to relate to it. This concept breaks down the inmate population into smaller groups with assigned staff, and facilitates the development of interpersonal relationships. The living unit training program will be conducted on a continuing basis as additional institutions are designated as "Living Unit Institutions". The training program for living unit officers is scheduled to keep up with the demand in order that training will occur immediately following the competitive and/or selection process. The program cannot function properly without establishing simultaneously adequate and indispensable security teams. The principles of the living unit cannot be implemented successfully without clearly dividing responsibilities between security and living unit officers. Therefore, each institution will have its own security force. The separation into two groups of correctional officers will help in providing better specialized training, more frequent and effective staff meetings and over-all improved security control.

The temporary absence program has been used extensively during the fiscal year 1973-74. More than 34,000 individual permits and 3,000 group permits were authorized and the failure rate has been kept down to a fraction of 1%. The program involved over 5,000 different inmates. Temporary absence can be granted for periods of up to three days by heads of institutions and 15 days by the Commissioner of Penitentiaries for humanitarian, rehabilitative and medical reasons.

A sound program of evening and weekend activities has been expanded over the past year. Twenty-one citizen participation committees comprising 210 citizens operate in institutions. More than 4,000 citizen volunteers are involved in inmate programs both institutional and community oriented. A number of those involved are ex-inmates who are responsible for organizing their own groups in consultation with institutional authorities. The programs include Alcoholics Anonymous, drama, singing, music instruction, guitar groups, public speaking, lectures, films, sports and recreation as well as diversified discussion groups led by private agencies, professionals, voluntary citizens and community groups.

An inmate in need of professional treatment or counselling is served by staff specialists responsible for an inmate population of about 9,200. There are 15 full-time physicians and 14 on contractual arrangements or part-time; four full-time dentists and 13 part-time or on contract; 14 psychiatrists on permanent strength, 13 on contract or part-time; 44 psychologists and 315 classification officers and social workers.

2.9.3 The parole system

Parole is a means by which an inmate in any correctional institution in Canada, if he gives definite indication of his intention to reform, can be released to finish his sentence in the community. The purpose of parole is the protection of society through the rehabilitation of the inmate. The true purpose of corrections should be the reformation of the offender and not merely vengeance or retribution. Nevertheless, the National Parole Board is as much concerned with the protection of society as with the reformation of the offender and supervision is as much a part of the parole system as is guidance. The Board selects inmates who show a sincere intention to reform and assists them to do so by granting parole. The inmate then is allowed to serve the remainder of his sentence in society but under supervision and subject to certain restrictions and conditions. The Board is not a reviewing authority and is not concerned with the propriety of the conviction or the length of the sentence; this is the function of the court. Nor is parole granted for clemency or mercy.

The National Parole Board is composed of nine members, including a chairman and vice-chairman, who are appointed for periods of 10 years. Additionally, there are 10 ad hoc members appointed for periods of up to five years. The Board has its headquarters in Ottawa and is establishing regional boards in each of five geographic regions of Canada (Atlantic, Quebec, Ontario, the Prairies and Northwest Territories, and British Columbia and the Yukon Territory). It has jurisdiction for parole over any adult inmate of any prison in Canada who has been convicted of an offence under any federal statute and it has authority to revoke or suspend any order made under the criminal code prohibiting any person from operating a motor vehicle. It has no jurisdiction over a child under the Juvenile Delinquents Act or an inmate serving a sentence for a breach of a provincial statute, such as a liquor control Act.

Through the Parole Act the National Parole Board is involved in the pardon granting process under the Royal Prerogative of Mercy when asked to do so by the Solicitor General of Canada. This concerns free pardons, ordinary pardons, and remissions of fines, forfeitures, or penalties. Under the Criminal Records Act (RSC 1970, c.12 1st Supp.) the Board also has specific responsibilities for investigations and recommendations concerning pardons of people who were convicted and subsequently rehabilitated. Under that Act a pardon may be granted two years after the end of a sentence for a summary offence or five years after a sentence for an indictable offence.

A person is sent to a federal institution if his sentence of imprisonment is two years or more or to a provincial institution if his sentence is less than two years. All inmates can become eligible to apply for parole and need not obtain the services of a lawyer to do so. The date of parole review to grant or refuse parole for an inmate in a federal penitentiary is set within six months of his entry into the institution. If the sentence is under two years, the inmate is eligible for parole after one third of the sentence is served; if the sentence is two years or more, the inmate is eligible after one third of the sentence is served or after seven years, whichever is less, although he must serve at least nine months of his sentence. Eligibility for an inmate who forfeited his parole by conviction for an indictable offence comes after he either serves one half of his new term, which is made up of the remainder of his sentence plus any new sentence, or after he serves seven years, whichever comes first. The Board has the authority to grant an earlier release in exceptional circumstances where the case is deserving and where the best interests of the community and the inmate will be served.

Anyone sentenced to preventive detention as an habitual criminal or dangerous sexual offender has his case reviewed at least once a year — under the criminal code — to see if he should be granted parole. An offender sentenced to life for a crime other than murder becomes eligible for parole after serving seven years.

No inmate sentenced for murder may be released on full parole by the Board without the approval of the Governor in Council. Although eligibility dates may be seven or 10 years for murderers sentenced before January 1, 1974, all offenders sentenced for murder on or after that date will become eligible only after serving a minimum of 10 years. However, eligibility will depend on the time stipulated by the sentencing Court and that may be fixed at any time between 10 and 20 years.

Unless an inmate in a federal institution advises the Board in writing that he does not want parole the Board will review his case every two years, whether he applies or not, until he is either granted parole or his sentence is served. However, once eligible for parole the inmate

may apply at any time. An inmate in a provincial institution must either apply or have someone apply on his behalf. When an application is received an investigation lasting about four months is begun and the results presented to the Board for decision. In addition, a representative of the Board interviews the inmate.

The decision of the Board about any one inmate is based on reports it receives from the police, from the trial judge or magistrate and from various people at the institution who deal with him. Reports may also be obtained from a psychologist or a psychiatrist and, if necessary, a community investigation is conducted to secure as much information as possible about his family and background, his work record and his position in the community. From these reports, an assessment is made to determine whether he has changed his attitude and is likely to lead a law-abiding life.

When all the reports are received and the community investigation completed, they are analyzed and presented to the Board for consideration. Parole for inmates in provincial institutions is granted or refused on the basis of these reports and investigations. For the inmate in a federal institution there is one more step before the Board makes its decision. He is interviewed by a panel of two or more Board members before his parole eligibility date to clarify or amplify his reasons for requesting parole and other aspects of his case that may have come to light through the reports and investigations.

A person on parole is under the care of a supervisor in one of the district offices of the National Parole Service, an after-care agency worker, or a probation officer. If he violates the conditions of his parole or commits a further offence or misbehaves in any manner the Board may suspend or revoke his parole and return him to the institution to serve the part of his sentence that was outstanding at the time his parole was granted. If a parolee commits an indictable offence his parole is automatically forfeited and he is returned to the institution to serve the unexpired balance of his sentence plus any new term to which he is sentenced for the commission of the new offence. The district representative may also issue a Warrant of Suspension and have a parolee placed in custody if it is necessary to prevent a breach of any term or conditions of the parole. These officers are thus able to exercise effective and adequate control over all parolees in their respective areas.

The Board has been in operation since January 1959 and up to the end of December 1973 it had granted 43,847 full paroles. During those 15 years there were 8,968 violations of parole; 3,063 revocations by the Board for misbehaviour or commission of a minor offence and 5,905 forfeits for conviction of an indictable offence. In 1973 the Board granted 1,112 full paroles to inmates in federal institutions and to 1,571 inmates serving sentences in provincial institutions for violation of a federal law. It also granted 747 day paroles to federal inmates and 736 day paroles to provincial inmates. In 1973 there were also 1,721 federal inmates released on mandatory supervision. During the same year there were 311 revocations and 301 forfeitures of mandatory supervision.

Sources

- 2.1 - 2.6 Legal Research and Planning Section, Legal Branch, Department of Justice.
- 2.7 Judicial Division, Institutional and Public Finance Statistics Branch, Statistics Canada; Royal Canadian Mounted Police; Ontario Provincial Police; Quebec Police Force.
- 2.8 - 2.9.1 Judicial Division, Institutional and Public Finance Statistics Branch, Statistics Canada.
- 2.9.2 Canadian Penitentiary Service.
- 2.9.3 National Parole Board.

Tables

..	not available	e	estimate
...	not appropriate or not applicable	p	preliminary
—	nil or zero	r	revised
--	too small to be expressed	certain tables may not add due to rounding	

2.1 Provinces and territories of Canada, dates of admission to Confederation, legislative processes by which admission was effected, present area and seat of government

Province, territory or district	Date of admission or creation	Legislative process	Present area sq miles	Seat of provincial or territorial government
Ontario ¹	July 1, 1867	Act of Imperial Parliament — The British North America Act, 1867 (Br. Stat. 1867, c. 3) and Imperial Order in Council, May 22, 1867	412,582	Toronto
Quebec ²	July 1, 1867		594,860	Quebec
Nova Scotia	July 1, 1867		21,425	Halifax
New Brunswick	July 1, 1867		28,354	Fredericton
Manitoba ³	July 15, 1870	Manitoba Act, 1870 (SC 1870, c. 3) and Imperial Order in Council, June 23, 1870	251,000	Winnipeg
British Columbia	July 20, 1871	Imperial Order in Council, May 16, 1871	366,255	Victoria
Prince Edward Island	July 1, 1873	Imperial Order in Council, June 26, 1873	2,184	Charlottetown
Saskatchewan ⁴	Sept. 1, 1905	Saskatchewan Act, 1905 (SC 1905, c. 42)	251,700	Regina
Alberta ⁴	Sept. 1, 1905	Alberta Act, 1905 (SC 1905, c. 3)	255,285	Edmonton
Newfoundland	Mar. 31, 1949	The British North America Act, 1949 (Br. Stat. 1949, c. 22)	156,185	St. John's
Northwest Territories ⁵	July 15, 1870	Act of Imperial Parliament — Rupert's Land Act, 1868 (Br. Stat. 1868, c. 105) and Imperial Order in Council, June 23, 1870	1,304,903	Yellowknife
Mackenzie ⁶	Jan. 1, 1920	Order in Council, Mar. 16, 1918		
Keewatin ⁶	Jan. 1, 1920			
Franklin ⁶	Jan. 1, 1920			
Yukon Territory ⁷	June 13, 1898	Yukon Territory Act, 1898 (SC 1898, c. 6)	207,076	Whitehorse
Canada			3,851,809	

¹The area of Ontario was extended by the Ontario Boundaries Extension Act, 1912 (SC 1912, c. 40).

²Extended by Quebec Boundaries Extension Act, 1912 (SC 1912, c. 45) and diminished Mar. 1, 1927 in consequence of the Award of the Judicial Committee of the British Privy Council whereby approximately 112,000 sq miles of territory (formerly considered as part of Quebec) was assigned to Newfoundland.

³Extended by the Extension of Boundaries Act of Manitoba, 1881 and the Manitoba Boundaries Extension Act, 1912 (SC 1912, c. 32).

⁴Saskatchewan and Alberta created as provinces in 1905 from the area formerly comprised in the provisional districts of Assiniboia, Athabaska, Alberta and Saskatchewan established May 17, 1882 by minute of Canadian Privy Council concurred in by Dominion Parliament and Order in Council, Oct. 2, 1895.

⁵By an Imperial Order in Council passed on June 23, 1870 pursuant to the Rupert's Land Act, 1868 (Br. Stat. 1868, c. 105), the former territories of the Hudson's Bay Company known as Rupert's Land and the North-Western Territory were transferred to Canada effective July 15, 1870. These territories were designated as the North-West Territories by the Act of SC 1869, c. 3, and as the Northwest Territories by RSC 1906, c. 62. By Imperial Order in Council of July 31, 1880 (effective Sept. 1, 1880), all British territories and possessions in North America not already included within Canada and all islands adjacent thereto (with the exception of the Colony of Newfoundland and its dependencies) were annexed to Canada and these additional territories were formally included in the North-West Territories by SC 1905, c. 27. The province of Manitoba was formed out of a portion of the territories by the Manitoba Act, 1870 (SC 1870, c. 3) and a further portion was added to Manitoba in 1881 by SC 1881, c. 14. The provinces of Alberta and Saskatchewan were formed out of portions of the territories in 1905 and in 1912 other portions were added to Manitoba, Ontario and Quebec.

⁶By SC 1876, c. 21, a separate district to be known as the District of Keewatin was established and provision was made for the local government thereof. The Act was expressed to come into force by proclamation. It provided that portions of the District might be re-annexed to the North-West Territories by proclamation; in 1886 a portion of the District of Keewatin was re-annexed and in 1905 the entire Keewatin District was re-annexed. The Act of 1876 was never proclaimed. By Order in Council of May 8, 1882 the provisional districts of Assiniboia, Saskatchewan, Alberta and Athabaska were created for the convenience of settlers and for postal purposes. By Order in Council of Oct. 2, 1895 the further provisional districts of Ungava, Franklin, Mackenzie and Yukon were created. The boundaries of these provisional districts were re-defined by Order in Council of Dec. 18, 1897. Subsequently the Yukon Territory was formed, the provinces of Alberta and Saskatchewan were created and other portions of the territories were annexed to Quebec, Ontario and Manitoba. By Order in Council dated Mar. 16, 1918 (effective Jan. 1, 1920) the remaining portions of the Northwest Territories were divided into three provisional districts known as Mackenzie, Keewatin and Franklin.

⁷The provisional district of Yukon established in 1895 was created a judicial district of the North-West Territories by proclamation issued pursuant to Sect. 51 of the North-West Territories Act (RSC 1886, c. 50) on Aug. 16, 1897 and, by the Yukon Territory Act (SC 1898, c. 6), was declared to be a separate territory.

2.2 Police personnel, actual strength, 1971 and 1972

Force	1971				1972			
	Police	Cadets	Other full-time employees	Total	Police	Cadets	Other full-time employees	Total
Royal Canadian Mounted Police	9,917	—	3,254	13,171	10,960	—	3,967	14,927
Ontario Provincial Police	3,833	33	965	4,831	3,862	19	1,052	4,933
Quebec Police Force	3,604	43	764	4,411	3,861	28	794	4,683
Municipal Police (excl. RCMP and OPP contracts)	23,353	489	3,001	26,843	23,969	499	3,208	27,676
Canadian National Railways Police	541	—	26	567	524	—	28	552
Canadian Pacific Railway Company Police	444	—	22	466	340	—	108	448
National Harbours Board Police	248	—	55	303	246	—	67	313
Total	41,940	565	8,087	50,592	43,762	546	9,224	53,532

2.3 Crime statistics, by type of offence, 1971 and 1972 (based on Uniform Crime Reporting Program)

Year and offence	Actual offences ¹	Offences cleared		Persons charged			
		By charge	Other-wise			Juveniles	
				Adults			
				Male	Female	Male	Female
1971							
Criminal code	1,163,705	253,719	160,129	180,469	24,774	47,687	6,519
Murder, capital and non-capital	426	311	50	313	38	14	3
Attempted murder	335	255	25	235	33	9	1
Manslaughter	47	45	1	40	5	2	—
Rape	1,230	557	240	683	5	29	1
Other sexual offences	9,951	3,645	1,694	3,041	31	362	14
Wounding	1,852	1,004	448	652	106	243	40
Assaults (not indecent)	83,015	27,849	39,403	25,279	1,779	1,195	195
Robbery	11,239	3,038	723	3,401	217	727	63
Breaking and entering	188,462	30,950	13,127	20,884	639	14,443	546
Theft, motor vehicle	65,887	11,468	4,212	8,496	231	4,990	188
Theft over \$50	172,386	15,923	9,635	11,702	1,523	4,241	422
Theft \$50 or under	294,110	48,772	34,083	25,910	10,166	12,658	3,393
Having stolen goods	12,353	11,074	817	7,584	658	1,561	162
Fraud	68,181	33,170	7,568	14,321	2,475	505	135
Prostitution	1,991	1,833	37	401	1,595	20	14
Gaming and betting	2,267	1,931	90	2,885	231	—	1
Offensive weapons	6,788	5,014	891	4,220	178	322	18
Other criminal code ¹	243,185	56,930	47,085	50,422	4,864	6,365	1,323
Federal statutes ¹	39,667	25,947	8,144	19,669	1,184	659	385
Narcotic Control Act	18,900	12,282	1,373	11,217	1,380	882	142
Controlled drugs under the Food and Drugs Act	5,107	2,528	425	2,282	250	206	38
Provincial statutes ¹	344,771	236,214	97,370	211,955	15,209	5,808	3,052
Municipal by-laws ¹	73,915	44,505	18,790	36,521	5,286	1,186	159
1972							
Criminal code	1,192,984	262,402	165,478	188,147	27,384	46,647	5,992
Murder, capital and non-capital	479	355	71	322	54	21	5
Attempted murder	412	339	15	299	30	12	—
Manslaughter	40	36	1	36	4	1	—
Rape	1,296	575	226	689	6	67	2
Other sexual offences	9,624	3,243	1,719	2,684	26	372	17
Wounding	1,707	950	313	752	126	93	29
Assaults (not indecent)	85,129	27,400	42,104	25,956	2,030	1,149	207
Robbery	11,881	3,265	638	3,525	198	834	41
Breaking and entering	191,519	31,484	12,666	20,915	701	14,958	530
Theft, motor vehicle	70,729	12,577	4,425	9,486	275	5,281	186
Theft over \$50	151,263	14,006	8,163	10,464	1,611	3,477	369
Theft \$50 or under	314,429	49,868	35,034	27,728	11,135	11,842	3,328
Having stolen goods	13,337	11,926	948	7,715	809	1,516	167
Fraud	68,897	33,105	8,697	14,259	3,095	457	146
Prostitution	2,182	2,068	37	424	1,652	8	35
Gaming and betting	3,124	2,586	55	3,213	310	—	1
Offensive weapons	7,529	5,502	1,086	4,518	195	346	18
Other criminal code ¹	259,407	63,117	49,280	55,162	5,127	6,202	910
Federal statutes ¹	39,794	28,672	7,029	18,986	1,160	629	416
Narcotic Control Act	23,844	18,103	1,587	16,711	2,343	720	124
Controlled drugs under the Food and Drugs Act	4,975	3,255	533	2,796	421	178	38
Provincial statutes ¹	318,536	226,337	79,379	200,556	13,040	6,102	3,397
Municipal by-laws ¹	73,749	41,835	20,207	35,485	4,534	1,113	135

¹Except traffic.²Except traffic, Narcotic Control Act and Food and Drugs Act.

2.4 Traffic enforcement statistics, by type of offence, 1971 and 1972 (based on Uniform Crime Reporting Program)

Offence	Actual offences	Offences cleared		Persons charged	
		By charge	Otherwise	Male	Female
1971					
Criminal code	163,921	119,596	9,032	113,843	3,271
Criminal negligence					
Causing death	226	221	1	218	4
Causing bodily harm	66	63	1	63	1
Operating motor vehicle	515	436	4	402	5
Failing to stop or remain at scene of accident	51,446	9,187	8,371	8,021	512
Dangerous driving	4,948	4,467	143	4,222	73
Failure or refusal to provide breath sample	5,601	5,565	22	5,283	132
Driving while impaired	91,189	89,902	427	86,482	2,434
Driving while disqualified	9,930	9,755	63	9,152	110
Federal statutes (except parking)	..	..	..	..	4,754
Provincial statutes (except parking)	..	..	..	..	1,821,367
Municipal by-laws (except parking)	..	..	..	..	500,707
Provincial statutes ¹	69,379	50,448	7,979	45,161	3,628
Failing to stop or remain at scene of accident	20,127	6,776	2,140	5,918	473
Dangerous driving	47,843	42,341	5,766	37,926	3,139
Driving while disqualified	1,409	1,331	73	1,317	16

2.4 Traffic enforcement statistics, by type of offence, 1971 and 1972 (based on Uniform Crime Reporting Program) (concluded)

Offence	Actual offences	Offences cleared		Persons charged	
		By charge	Otherwise	Male	Female
1972					
Criminal code	185,013	135,335	9,777	129,212	3,708
Criminal negligence					
Causing death	212	202	2	205	3
Causing bodily harm	87	69	2	68	—
Operating motor vehicle	515	484	8	444	11
Failing to stop or remain at scene of accident	58,258	10,393	8,942	9,221	556
Dangerous driving	4,989	4,528	144	4,220	78
Failure or refusal to provide breath sample	8,357	8,271	21	7,939	264
Driving while impaired	100,540	99,443	592	95,891	2,670
Driving while disqualified	12,055	11,945	66	11,224	126
Federal statutes (except parking)	..	..	..		5,425
Provincial statutes (except parking)	..	..	..	2,012,035	
Municipal by-laws (except parking)	..	..	..	432,772	
Provincial statutes ¹	82,364	58,479	8,435	53,938	4,155
Failing to stop or remain at scene of accident	25,016	7,776	2,513	6,954	541
Dangerous driving	55,907	49,340	5,873	45,657	3,589
Driving while disqualified	1,441	1,363	49	1,327	25

¹Provincial traffic offences almost identical to those under the criminal code.

2.5 Persons charged and persons convicted of indictable offences, with ratio per 100,000 population 16 years of age or over, by province, 1970 and 1971

Province or territory	Persons charged		Persons convicted				Persons convicted per 100,000 population 16 years of age and over	
	1970	1971	1970	%	1971	%	1970	1971
	No.	No.	No.		No.		No.	No.
Newfoundland	1,082	1,163	1,047	96.8	1,127	97.0	337	355
Prince Edward Island	79	55	72	91.1	47	85.5	100	64
Nova Scotia	2,407	2,549	2,211	91.9	2,303	94.3	432	444
New Brunswick	2,238	2,343	2,136	95.4	2,233	95.3	527	538
Ontario	27,047	29,382	23,734	87.8	25,888	88.1	452	478
Manitoba	4,309	3,198	3,680	85.4	2,719	85.0	548	399
Saskatchewan	3,855	3,910	3,623	94.0	3,729	95.4	575	595
British Columbia	10,527	11,045	9,067	86.1	9,424	85.3	609	612
Yukon Territory and Northwest Territories	322	453	310	96.3	404	89.2	1,119	1,347
Canada ¹	51,866	54,098	45,880	88.5	47,874	88.5	490	498

¹Excludes Quebec and Alberta.

2.6 Persons charged and convicted of indictable offences, by class of offence, 1970 and 1971

Class of offence	1970		1971		1971	
	Persons charged	Persons convicted	Persons charged	Persons convicted	Male	Female
Criminal code						
Class I. Offences against the person	7,356	5,560	355	7,213	5,429	344
Class II. Offences against property with violence	7,983	7,069	172	8,399	7,488	196
Class III. Offences against property without violence	27,580	19,297	5,704	29,432	20,231	6,470
Class IV. Malicious offences against property	1,394	1,119	90	1,574	1,296	84
Class V. Forgery and other offences relating to currency	1,214	942	190	1,328	986	244
Class VI. Other offences	3,685	2,924	264	3,784	2,943	242
Total	49,212	36,911	6,775	51,730	38,373	7,580
Federal statutes	2,654	1,972	222	2,368	1,766	155
Total ¹	51,866	38,883	6,997	54,098	40,139	7,735

¹Excludes Quebec and Alberta.

2.7 First court sentences given for indictable offences, by province, 1970 and 1971

Year and sentence	Nfld.	PEI	NS	NB	Ont.	Man.	Sask.	BC	YT and NWT	Canada ¹
1970										
Option of fine	390	30	834	709	8,022	803	1,116	2,499	84	14,487
Jail										
Under one year	236	21	456	564	4,329	904	938	2,835	107	10,390
One year and over	40	3	9	95	529	272	225	598	18	1,789
Reformatory and training school	—	—	5	3	2,233	—	—	—	—	2,241
Penitentiary	—	—	—	—	—	—	—	—	—	—
Under two years	—	—	3	21	44	4	7	4	1	84
Two years and under five	20	8	210	117	717	212	100	281	3	1,668
Five years and under ten	—	—	10	11	147	32	11	57	—	268
Ten years and under fourteen	—	—	1	—	22	1	3	14	—	41
Fourteen years and over	—	—	—	—	9	1	1	4	—	15
Life	—	—	2	—	16	8	4	9	1	40
Preventive	—	—	1	—	1	1	1	1	—	5
Death	—	—	—	—	1	2	—	—	—	3
Suspended sentence without probation	47	3	30	182	1,478	948	407	462	2	3,559
Suspended sentence with probation	314	7	650	434	6,186	492	810	2,303	94	11,290
Total	1,047	72	2,211	2,136	23,734	3,680	3,623	9,067	310	45,880
1971										
Option of fine	446	19	901	719	9,065	605	994	2,802	83	15,634
Jail										
Under one year	214	6	519	534	5,315	624	1,094	3,011	147	11,464
One year and over	56	1	33	123	944	219	203	579	31	2,189
Reformatory and training school	—	—	8	7	1,430	—	—	1	—	1,446
Penitentiary	—	—	—	—	—	—	—	—	—	—
Under two years	—	—	2	10	44	—	9	21	—	86
Two years and under five	30	8	199	85	627	139	89	296	5	1,478
Five years and under ten	1	1	10	10	159	23	13	81	2	300
Ten years and under fourteen	—	—	7	—	31	8	1	29	—	76
Fourteen years and over	—	—	—	—	13	—	—	9	—	22
Life	2	—	2	—	8	3	1	12	—	28
Preventive	—	—	—	—	1	—	—	1	—	2
Death	—	—	—	—	—	—	—	—	—	—
Suspended sentence without probation	10	4	62	217	1,747	640	445	233	12	3,370
Suspended sentence with probation	368	8	560	528	6,504	458	880	2,349	124	11,779
Total	1,127	47	2,303	2,233	25,888	2,719	3,729	9,424	404	47,874

¹Excludes Quebec and Alberta.

2.8 Method of trial of persons charged with indictable offences, showing disposition of cases, by province, 1970 and 1971

Year and method of trial	Nfld.	PEI	NS	NB	Ont.	Man.	Sask.	BC	YT and NWT	Canada ¹
1970										
By judge and jury										
Convicted	4	—	17	—	480	43	52	110	9	715
Acquitted	1	2	4	—	200	10	14	83	2	316
Detained because of insanity	1	—	—	—	26	1	2	5	—	35
Disagreement of jury	—	—	—	—	8	—	—	6	—	14
Stay of proceedings	—	—	—	—	6	4	12	12	—	34
No bill	2	1	1	—	53	—	—	—	—	57
By a judge without jury										
Convicted	1	8	110	—	748	56	146	160	19	1,248
Acquitted	—	3	33	—	256	10	58	57	—	417
Detained because of insanity	—	—	—	—	3	—	1	1	—	5
Stay of proceedings	—	—	—	—	2	2	7	21	—	32
By a magistrate with consent										
Convicted	606	31	1,016	1,088	12,217	2,017	1,779	4,666	164	23,584
Acquitted	12	1	68	54	1,425	98	71	518	9	2,256
Detained because of insanity	1	—	1	—	—	—	—	5	—	7
Stay of proceedings	—	—	—	—	2	264	2	291	—	559
By a magistrate, absolute jurisdiction										
Convicted	436	33	1,068	1,048	10,289	1,564	1,646	4,131	118	20,333
Acquitted	18	—	88	48	1,329	67	64	331	1	1,946
Detained because of insanity	—	—	1	—	2	—	—	4	—	7
Stay of proceedings	—	—	—	—	1	173	1	126	—	301
Total, persons charged	1,082	79	2,407	2,238	27,047	4,309	3,855	10,527	322	51,866
Total, persons convicted	1,047	72	2,211	2,136	23,734	3,680	3,623	9,067	310	45,880

2.8 Method of trial of persons charged with indictable offences, showing disposition of cases, by province, 1970 and 1971 (concluded)

Year and method of trial	Nfld.	PEI	NS	NB	Ont.	Man.	Sask.	BC	YT and NWT	Canada ¹
1971										
By judge and jury										
Convicted	8	1	39	11	427	49	38	149	6	728
Acquitted	4	—	6	2	209	7	22	53	4	307
Detained because of insanity	—	—	2	—	14	1	2	4	—	23
Disagreement of jury	—	—	1	—	2	—	—	2	—	5
Stay of proceedings	—	—	—	—	6	11	5	10	2	34
No bill	1	—	—	—	28	—	—	—	—	29
By a judge without jury										
Convicted	—	12	87	57	800	109	253	204	24	1,546
Acquitted	—	4	22	3	225	19	49	60	4	386
Detained because of insanity	—	—	—	—	4	—	—	—	—	4
Disagreement of jury	—	—	—	—	1	—	—	—	—	1
Stay of proceedings	—	—	—	—	—	—	—	—	—	—
By a magistrate with consent										
Convicted	640	16	1,135	1,155	12,844	1,392	1,625	4,785	221	23,813
Acquitted	20	3	99	43	1,529	62	23	427	15	2,221
Detained because of insanity	—	—	—	2	7	—	—	9	—	18
Disagreement of jury	—	—	—	—	2	—	—	—	—	2
Stay of proceedings	—	—	—	—	—	—	—	—	—	—
By a magistrate, absolute jurisdiction										
Convicted	479	18	1,042	1,010	11,817	1,169	1,813	4,286	153	21,787
Acquitted	10	1	115	51	1,446	58	64	351	3	2,099
Detained because of insanity	1	—	1	—	—	—	—	1	—	3
Stay of proceedings	—	—	—	6	7	112	—	184	4	313
Total, persons charged	1,163	55	2,549	2,343	29,382	3,198	3,910	11,045	453	54,098
Total, persons convicted	1,127	47	2,303	2,233	25,888	2,719	3,729	9,424	404	47,874

¹Excludes Quebec and Alberta.

2.9 Young adult offenders, by age group, sex and province, 1970 and 1971

Year, age group and sex	Nfld.	PEI	NS	NB	Ont.	Man.	Sask.	BC	YT and NWT	Canada ¹
1970										
16-17 years										
M	82	11	429	363	3,248	2	498	29	1	4,663
F	14	1	66	45	442	—	73	2	1	644
18-19 "										
M	200	17	376	292	2,875	660	570	1,558	6	6,554
F	9	—	36	30	369	64	96	249	1	854
20-24 "										
M	275	22	504	429	4,104	967	606	2,263	17	9,187
F	28	—	62	27	572	96	70	361	—	1,216
Total	608	51	1,473	1,186	11,610	1,789	1,913	4,462	26	23,118
1971										
16-17 years										
M	116	8	418	355	3,625	7	527	230	16	5,302
F	14	—	71	33	526	—	73	38	1	756
18-19 "										
M	226	8	385	288	3,207	577	607	1,481	16	6,795
F	29	1	47	20	407	53	100	303	1	961
20-24 "										
M	291	18	544	437	4,462	733	577	2,209	39	9,310
F	41	—	79	24	669	75	99	389	4	1,380
Total	717	35	1,544	1,157	12,896	1,445	1,983	4,650	77	24,504

¹Excludes Quebec and Alberta.

2.10 Young adult offenders convicted of indictable offences, by class of offence and sex, 1970 and 1971

Class of offence	1970		1971	
	Male	Female	Male	Female
Criminal code				
Class I. Offences against the person	2,173	110	2,107	109
Class II. Offences against property with violence	4,684	105	4,931	117
Class III. Offences against property without violence	9,648	2,080	10,631	2,474
Class IV. Malicious offences against property	608	35	714	37
Class V. Forgery and other offences relating to currency	395	95	420	130
Class VI. Other offences	1,313	121	1,235	114
Total	18,821	2,546	20,038	2,981
Federal statutes	1,583	168	1,369	116
Total ¹	20,404	2,714	21,407	3,097

¹Excludes Quebec and Alberta.

2.11 Convictions for summary conviction offences¹, by type, 1971 and 1972

Type of offence	1971	1972 ^P
CRIMINAL CODE	104,458	104,825
Attempts, conspiracies, accessories, counselling	169	134
Attempt to commit suicide	84	21
Bawdy house	132	126
Causing disturbance by being drunk	2,670	1,724
Common assault	8,176	7,965
Communicating venereal disease	25	28
Contempt of court	47	32
Corrupting morals	215	253
Cruelty to animals	87	48
Damage not exceeding \$50 and other interference with property	3,291	3,113
Disorderly conduct	9,860	8,705
Duty of persons to provide necessities	136	74
Duty to safeguard dangerous places	14	2
Fraudulently obtaining food or lodging	974	715
Fraudulently obtaining transportation	122	154
Gaming, betting, lotteries	467	556
Intimidation	111	151
Killing or injuring bird or animal other than cattle	42	46
Motor vehicle		
Criminal negligence in operation	412	252
Dangerous driving	1,991	2,035
Dangerous operation of vessel, etc.	101	135
Driving while impaired	27,762	25,392
Driving while disqualified	5,039	5,640
Driving with more than 80 mg in blood	24,734	27,502
Failing to stop at scene of accident	3,119	3,346
Failure or refusal to provide breath sample	4,089	5,801
Motor vehicle equipped with smoke screen	42	70
Taking motor vehicle without consent	1,580	1,506
Offensive weapons	1,119	1,202
Personating peace officer	31	101
Recognizance, breach of	2,964	2,938
Vagrancy	3,281	883
Other criminal code	4,572	4,175
FEDERAL STATUTES	30,712	28,849
Customs	102	63
Excise	783	421
Fisheries	793	952
Food and drugs	1,906	2,932
Harbour board and merchant seamen's	236	193
Immigration	440	352
Income tax	7,366	8,957
Indian		
Intoxication	111	201
Other	447	236
Juvenile delinquents		
Adults who contribute to delinquency	579	474
Inducing child to leave home, etc.	16	20
Sexual immorality	1,274	142
Lord's day	336	343
National defence	186	255
Railway	1,076	562
Unemployment insurance	2,607	1,805
Weights and measures	95	248
Other federal statutes	12,359	10,693
PROVINCIAL STATUTES	1,186,021	1,281,582
Children of unmarried parents	1,732	1,104
Deserted wives and children's maintenance	9,626	10,762
Game and fisheries	6,715	7,026
Highway traffic		
Driving without care	39,537	49,027
Other traffic	965,337	1,046,581
Liquor control	139,676	125,862
Master and servant	466	435
Medical, dentistry and pharmacy	38	62
Mental diseases	137	120
Prairie and forest fire prevention	67	48
Protection of children	4,241	4,989
Public health	526	523
School laws	295	209
Other provincial statutes	17,628	34,834
MUNICIPAL BY-LAWS	117,947	102,206
Intoxication	2,403	522
Traffic	86,992	75,088
Other	28,552	26,596
Total convictions	1,439,138	1,517,462

¹Excludes Quebec, Alberta and Yukon Territory.

2.12 Juvenile delinquents, by group of offence, and ratio per 100,000 population, 1970-72

Group of offence		1970 ¹	1971 ²	1972
Delinquencies against the person	<i>No.</i>	857	849	1,726
	<i>Ratio</i>	20	19	38
Delinquencies against property with violence	<i>No.</i>	5,864	5,518	9,064
	<i>Ratio</i>	136	127	199
Delinquencies against property without violence	<i>No.</i>	11,629	11,292	15,116
	<i>Ratio</i>	270	259	331
Wilful and forbidden acts in respect of certain property	<i>No.</i>	1,841	1,748	2,640
	<i>Ratio</i>	43	40	58
Forgery and delinquencies relating to currency	<i>No.</i>	162	147	174
	<i>Ratio</i>	4	3	4
Other delinquencies	<i>No.</i>	8,035	9,022	13,463
	<i>Ratio</i>	186	207	295
Total convictions	<i>No.</i>	28,388	28,576	42,183
	<i>Ratio</i>	658	656	924

¹Excludes Manitoba.²Excludes Manitoba and Alberta.**2.13 Juvenile delinquents classified by type of delinquency, 1970-72**

Delinquency		1970 ¹	1971 ²	1972
Manslaughter and murder and causing death by criminal negligence		8	4	21
Murder, attempt		—	6	8
Common assault		421	396	747
Other offences against the person		428	443	950
Breaking and entering a place		5,665	5,328	8,694
Robbery and extortion		199	190	370
Theft and having in possession		9,709	9,546	12,065
False pretences and fraud and corruption		174	171	213
Arson		110	100	179
Other interference with property		1,731	1,648	3,429
Incorrigibility and vagrancy		1,394	1,211	657
Immorality		178	141	390
Theft, auto		1,017	916	1,246
Joyriding		729	659	624
Various other delinquencies		6,625	7,817	12,590
Total		28,388	28,576	42,183

¹Excludes Manitoba.²Excludes Manitoba and Alberta.**2.14 Disposition of delinquents, by type of sentence, 1970-72**

Type of sentence		1970 ¹	1971 ²	1972
Reprimanded	<i>No.</i>	440	377	791
	<i>%</i>	1.1	0.9	2.8
Probation of court	<i>No.</i>	13,185	12,468	11,239
	<i>%</i>	33.4	31.3	40.4
Protection of parents	<i>No.</i>	1,475	1,607	814
	<i>%</i>	3.7	4.0	2.9
Fined or made restitution	<i>No.</i>	3,804	4,604	5,220
	<i>%</i>	9.6	11.5	18.8
Detained indefinitely	<i>No.</i>	478	301	129
	<i>%</i>	1.2	0.8	0.5
Sent to training school	<i>No.</i>	2,425	2,525	1,190
	<i>%</i>	6.2	6.3	4.3
Final disposition suspended	<i>No.</i>	6,563	6,678	7,179
	<i>%</i>	16.6	16.7	25.8
Mental hospital	<i>No.</i>	18	16	35
	<i>%</i>	0.1	0.1	0.1
Other	<i>No.</i>	11,070	11,338	1,226
	<i>%</i>	28.1	28.4	4.4

¹Excludes Manitoba.²Excludes Manitoba and Alberta.

2.15 Population in provincial adult institutions and in training schools, 1970-72

Type of institution	1970 ^r	1971	1972
Provincial adult institutions (Mar. 31)	12,186	12,126	10,682 ¹
Training schools (Dec 31)	2,243	1,959	1,877
For boys	1,501	1,308	1,269
For girls	742	651	608

¹Population as at Dec. 31, 10,006.

2.16 Population in penitentiaries, years ended Dec. 31, 1970-72

Item	1970	1971	1972
In custody at beginning of year	7,159	7,109	7,483
Received during year	11,276	11,899	12,115
Discharged during year	11,327	11,522	11,345
In custody at end of year	7,108	7,486	8,253

Sources

- 2.1 Legal Research and Planning Section, Legal Branch, Department of Justice.
- 2.2 - 2.16 Judicial Division, Institutional and Public Finance Statistics Branch, Statistics Canada.

Chapter 3

Government

3.1 Organization of the federal government

In any political system there are processes whereby people express their demands to the government; whereby priorities are established among those demands and policies formulated for their implementation; and, finally, whereby the policies are implemented. The institutions, both governmental and non-governmental, through which these processes are carried on vary from country to country and tend to evolve over time, so that in any given country the roles of the institutions in such processes also change over time. This Section describes the institutions of the Government of Canada and their current roles in the fundamental processes of the Canadian political system.

In most countries, the legal framework within which political processes take place is provided through a constitution. The written Constitution of Canada is embodied in the British North America Acts. The first of these Acts, passed by the British Parliament in 1867, not only established the institutions through which legislative, executive and judicial powers are exercised in Canada but also established a federal form of government. A central government — the federal government — has legislative jurisdiction primarily over matters of national concern and over those matters not otherwise assigned to the provinces. The 10 provincial governments are assigned specific areas of legislative jurisdiction including municipal institutions.

In Canada, there is a fusion of the executive and legislative powers as there is in Britain. Formal executive power in Canada is vested in the Queen, whose authority is delegated to the Governor General, her representative. Legislative power is vested in the Parliament of Canada which consists of the Queen, an appointed upper house called the Senate and a lower house called the House of Commons, elected by universal adult suffrage. The independence of the judiciary is safeguarded through the constitutional provision that superior court judges are appointed by the Governor in Council (i.e. by the Governor General on advice of the Cabinet) and that they hold office during good behaviour and are removable only by the Governor General on address of the Senate and the House of Commons. In other words, judges cannot be removed unless both Houses of Parliament, the Cabinet and the Governor General agree.

In the Canadian system of government, where the executive is part of Parliament, democratic principles could not be adhered to without the constitutional convention that the government is responsible to the House of Commons. When the government loses the confidence of the House of Commons, it must resign or the Prime Minister must request the Governor General to dissolve Parliament and call a general election. Although there are conventions that help in deciding when the government has lost the confidence of the House, all doubt is removed when the government is defeated on a motion on which it had explicitly staked its life or when a motion of non-confidence in the government is passed. If the government resigns, the Governor General can call on the Leader of the Opposition (who is usually the leader of the political party that has the second largest number of seats in the House of Commons) to form a new government. If a government that has lost the confidence of the House of Commons and is granted a dissolution is defeated in the ensuing general election and if no clear majority is elected, the government has two choices — it can remain in office and seek the confidence of the House of Commons when it meets or it can resign at once. If it resigns, the Governor General will normally ask the leader of another party, usually the one that has won the most seats, to form a new government. The primary responsibility of the Governor General in either circumstance is to provide the nation with a government capable of carrying on with the support of the House of Commons.

The Prime Minister and his Cabinet, who with one or two exceptions are members of the House of Commons, are, formally speaking, the Queen's advisers. In fact there are virtually no significant actions that can be taken by the Queen or her representative in Canada, the Governor General, without the advice of the Cabinet. The Prime Minister and his Cabinet determine executive policies and are responsible for them to the House of Commons. The Queen and the Governor General have the traditional rights to be consulted, to encourage and to warn the government.

The demands of Canadian citizens are directed primarily to members of Parliament, directly to Cabinet Ministers or indirectly to Cabinet Ministers through the Public Service. These demands may originate from individuals, political parties or pressure groups; members of Parliament, Cabinet Ministers and public servants may take the initiative in suggesting the adoption of policies and programs in the public interest. Although the roles performed by Parliament, the Public Service and the Cabinet cannot be defined with absolute precision, the following stylized description deals with the most obvious and primary roles of each in the Canadian political system.

The determination of public policy rests with the Cabinet but begins generally with the formulation of policy by the individual Ministers. In practice this usually means that public servants under the direction of a Minister formulate policy proposals which he then submits, if he agrees, to his colleagues in the Cabinet. The Cabinet studies the policies submitted and chooses those it wishes to implement. The Cabinet may itself formulate policies, but it may also decide to select a policy from among the alternatives submitted. The establishment of a Cabinet committee system that operates on a functional basis and, more especially, the establishment of the Cabinet Committee on Priorities and Planning represent attempts to enhance the capacity of Cabinet in its primary role of policy determination and priority setting.

In conformity with the principle of the rule of law, all executive acts must be authorized by law, and laws are enacted by Parliament. Executive acts may be carried out under a statute which specifies how a policy is to be implemented, or under a statute which authorizes the Governor in Council to undertake specific acts. Much of the activity of the Public Service is authorized through the yearly enactment of Appropriation Acts approving the expenditure of public funds for specific purposes. Parliament is concerned primarily with the discussion and authorization of policy submitted for its approval by the government. The approval of these policies is accomplished mainly through the enactment of legislation. In an attempt to enable the House of Commons to perform this role more efficiently numerous changes in the rules of procedure were adopted in January 1969, and are now included in the Standing Orders of the House of Commons.

The most significant feature of these processes is that Cabinet Ministers, who constitute the government, have seats in Parliament and thus share in the exercise of the legislative power. In fact, the majority of legislation enacted by Parliament is submitted by the government; the Constitution provides that all financial measures must originate in the House of Commons.

The role of the judiciary is to apply the laws enacted by Parliament. In the Canadian system of government, Parliament is supreme. This means, among other things, that the judiciary must apply the law as Parliament has enacted it and cannot declare laws to be unconstitutional if they are within the legislative jurisdiction of Parliament or of the legislature that enacted them.

The administration of legislation and of the government's policies is carried out through a Public Service comprising employees organized as of 1973 in 25 departments of government and a large number of special boards, commissions and Crown corporations or other agencies. Legislation and tradition have combined to develop a non-partisan Public Service, the tenure of whose employees is unaffected by changes in government. The only direct contact between public servants and Parliament occurs when they are called to appear as witnesses before parliamentary committees. On these occasions, public servants do not, by convention, express opinions on public policy but usually appear as experts and to explain existing policy. The public servants who head agencies such as the Public Service Commission, the Office of the Auditor General, the Office of the Commissioner of Official Languages, the Library of Parliament or the Office of the Chief Electoral Officer, all of which have a special relationship to Parliament and are not subject to direction by the government on matters of policy, may appear before parliamentary committees to explain the policies of their agencies.

The growth in number, variety and complexity of the demands placed on the government requires it not only to adjust its policies in response to these demands but, with increasing frequency, to make significant changes in the organization of the Public Service so that the required policies can be properly implemented. Major reorganization of the Public Service has been authorized by the passage of Government Organization Acts in 1966, 1969 and 1970.

3.1.1 The Executive

The Crown. The British North America (BNA) Act of 1867 (Sect. 9) provides that “the Executive Government and authority of and over Canada is . . . vested in the Queen”. The functions of the Crown (that is, the formal executive represented by the Queen), which are substantially the same as those of the Crown in relation to the British government, are discharged in Canada by the Governor General.

The Sovereign. Since Confederation Canada has had six sovereigns: Victoria, Edward VII, George V, Edward VIII, George VI and Elizabeth II. The present sovereign, Queen Elizabeth, is not only Queen of Canada but of several other countries in the Commonwealth. Her Majesty’s title for Canada was approved by Parliament and established by a Royal proclamation on May 28, 1953: Elizabeth the Second, by the Grace of God of the United Kingdom, Canada and Her other Realms and Territories Queen, Head of the Commonwealth, Defender of the Faith.

The Queen seldom personally discharges the functions of the Crown in respect of Canada except on such occasions as the periodic appointment of the Governor General which is done on the recommendation of the Prime Minister of Canada. On the occasion of a Royal visit, the Queen may participate in those ceremonies that are normally carried out in her name by the Governor General, such as the opening and dissolution of Parliament, the assent to bills passed by the House of Commons and the Senate, and the granting of a general amnesty.

The Governor General is the representative of the Crown in Canada. The present incumbent, The Right Honourable Jules Léger, is the 21st Governor General since Confederation. He was appointed by Queen Elizabeth on October 5, 1973 and took office on January 14, 1974. Constitutionally, the Queen of Canada is the Canadian head of state but the Governor General fulfils her role in this regard on her behalf. The letters patent revised and re-issued under the Great Seal of Canada on October 1, 1947 authorized the Governor General “to exercise on the advice of his Canadian ministers, all Her Majesty’s powers and authorities in respect of Canada”.

Following are the Governors General of Canada since Confederation, with dates of appointment:

The Viscount Monck of Ballytramon, June 1, 1867
 The Baron Lisgar of Lisgar and Bailieborough, December 29, 1868
 The Earl of Dufferin, May 22, 1872
 The Marquis of Lorne, October 5, 1878
 The Marquis of Lansdowne, August 18, 1883
 The Baron Stanley of Preston, May 1, 1888
 The Earl of Aberdeen, May 22, 1893
 The Earl of Minto, July 30, 1898
 The Earl Grey, September 26, 1904
 Field Marshal HRH The Duke of Connaught, March 21, 1911
 The Duke of Devonshire, August 19, 1916
 General The Baron Byng of Vimy, August 2, 1921
 The Viscount Willingdon of Ratton, August 5, 1926
 The Earl of Bessborough, February 9, 1931
 The Baron Tweedsmuir of Elsfield, August 10, 1935
 Major General The Earl of Athlone, April 3, 1940
 Field Marshal The Viscount Alexander of Tunis, March 21, 1946
 The Right Honourable Vincent Massey, January 24, 1952
 General The Right Honourable Georges P. Vanier, August 1, 1959
 The Right Honourable Roland Michener, March 29, 1967
 The Right Honourable Jules Léger, October 5, 1973.

One of the most important responsibilities of the Governor General is to ensure that the country always has a government. If the office of the Prime Minister becomes vacant because of death, resignation or defeat of the government in the House of Commons, the Governor General must see that the office of the Prime Minister is filled and that a new government is formed.

As the representative of the Queen — one of the three elements of the Canadian Parliament, the others being the Senate and the House of Commons — the Governor General summons, prorogues and dissolves Parliament on the advice of the Prime Minister. He signs Orders in Council, commissions and many other state documents, and gives his assent to bills

that have been passed in both Houses of Parliament and which thereby become acts of Parliament with the force of law (unless Parliament prescribes specifically otherwise). Like the Queen, he is bound in virtually all cases to carry out these duties in accordance with the advice of his responsible Ministers. Should he not wish to accept their advice, and should they maintain that advice, his only alternative is to replace the existing government with a new government. This alternative could be exercised only if, at the same time, the principle of responsible government could be upheld. This means that the Governor General's discretion in choosing another government is strictly limited to a situation in which a person other than the existing Prime Minister could command the confidence of the House of Commons.

In Canada, as in other constitutional monarchies, there is a clear division between the executive and representational functions of state. The Prime Minister, as the elected political leader of the country, is the chief executive and head of the government. The Governor General, on the other hand, is not involved in any way in party politics or political affiliation and he is, therefore, in a position to represent Canada as a whole and to speak for Canadians on ceremonial and state occasions. In effect, the Governor General has become an important symbol of the unity of Canada and of the continuity of its institutions and national life.

The Governor General is Canada's host to visiting heads of state and other distinguished visitors from abroad. He extends hospitality of many forms to many Canadians and lends his patronage in support of a great variety of activities throughout the country. The Governor General receives the letters of credence of ambassadors appointed to Canada, receives Commonwealth high commissioners on appointment and holds investitures for the conferring of honours and awards.

Canadian honours system. An exclusively Canadian honours system was introduced in 1967 with the establishment of the Order of Canada. The honours system was enlarged in 1972 with the addition of the Order of Military Merit and three decorations to be awarded in recognition of acts of bravery. A complete description of these awards and a list of the recipients during 1973 are given in Appendix 4.

The Privy Council. The BNA Act of 1867 (Sect. 11) provides for "a council to aid and advise in the Government of Canada, to be styled the Queen's Privy Council for Canada...". The Council that in fact advises the Queen's representative, the Governor General, is the Committee of the Privy Council whose membership is identical to that of Cabinet.

Membership in the Privy Council is for life. As at December 31, 1973, there were 126 members, including the 30 Cabinet Ministers of the government of the day, former Cabinet Ministers, various members of the Royal Family, past and present Commonwealth Prime Ministers, Premiers of provinces, former Speakers of the Senate and the House of Commons of Canada and a few distinguished civilians. A member of the Privy Council of Canada is styled "Honourable" and may use the initials PC after his name. A member of the Privy Council of Britain is styled "Right Honourable". The Governor General, the Chief Justice of Canada and the Prime Minister of Canada automatically assume the title "Right Honourable" when they take office.

The Privy Council as a whole has met on only a few ceremonial occasions; its constitutional responsibilities to advise the Crown on matters respecting the Government of Canada are discharged exclusively by the Committee of the Privy Council, i.e. the Cabinet. The legal instruments through which executive authority is exercised are called Orders in Council. The procedure is for the Committee of the Privy Council to make a submission to the Governor General for his approval which he is obliged to give in almost all circumstances; with this approval, the submission becomes an Order in Council. Meetings of the Committee of the Privy Council or a sub-committee of this Committee are held without formal ceremony.

The office of the President of the Privy Council was formerly occupied, more often than not, by the Prime Minister but from time to time, especially in recent years, it has been occupied by another Minister. On July 5, 1968, the Prime Minister explained that the incumbent of the office of President of the Privy Council would also be the Government Leader in the House of Commons, with the broad responsibility of directing the business of the House, including such matters as supervision of the government's replies to questions in the House and of parliamentary returns in general, and also a special responsibility on behalf of the government of ensuring that Parliament, through its operations and organization of business, can effectively discharge its vital role in the Canadian political process under the increasing pressure of modern government.

The following, with the dates when they were sworn in, were members of the Queen's Privy Council for Canada as at December 31, 1973:

- Hon. Thomas Alexander Crerar, October 12, 1917
 Hon. William Earl Rowe, August 30, 1935
 Hon. Colin William George Gibson, July 8, 1940
 Hon. Joseph Thorarinn Thorson, June 11, 1941
 Hon. Joseph Arthur Jean, April 18, 1945
 Hon. Lionel Chevrier, April 18, 1945
 Hon. Paul Joseph James Martin, April 18, 1945
 Hon. Douglas Charles Abbott, April 18, 1945
 Hon. Milton Fowler Gregg, September 2, 1947
 Hon. Stuart Sinclair Garson, November 15, 1948
 Hon. Hugues Lapointe, August 25, 1949
 Hon. Gabriel-Édouard Rinfret, August 25, 1949
 Hon. Walter Edward Harris, January 18, 1950
 Hon. George Prudham, December 13, 1950
 Hon. James Sinclair, October 15, 1952
 Hon. William Ross Macdonald, May 12, 1953
 Hon. George Alexander Drew, May 12, 1953
 Hon. John Whitney Pickersgill, June 12, 1953
 Hon. Jean Lesage, September 17, 1953
 Hon. George Carlyle Marler, July 1, 1954
 Hon. Paul Theodore Hellyer, April 26, 1957
 Rt. Hon. John George Diefenbaker, June 21, 1957
 Hon. Howard Charles Green, June 21, 1957
 Hon. Donald Methuen Fleming, June 21, 1957
 Hon. George Hees, June 21, 1957
 Hon. Léon Balcer, June 21, 1957
 Hon. George Randolph Pearkes, June 21, 1957
 Hon. Gordon Churchill, June 21, 1957
 Hon. Edmund Davie Fulton, June 21, 1957
 Hon. Douglas Scott Harkness, June 21, 1957
 Hon. Ellen Louks Fairclough, June 21, 1957
 Hon. John Angus MacLean, June 21, 1957
 Hon. Michael Starr, June 21, 1957
 Hon. William McLean Hamilton, June 21, 1957
 Hon. William Joseph Browne, June 21, 1957
 Hon. Jay Waldo Monteith, August 22, 1957
 Hon. Francis Alvin George Hamilton, August 22, 1957
 HRH The Prince Philip, Duke of Edinburgh, October 14, 1957
 Hon. Henri Courtemanche, May 12, 1958
 Hon. David James Walker, August 20, 1959
 Hon. Joseph-Pierre-Albert Sévigny, August 20, 1959
 Hon. Hugh John Flemming, October 11, 1960
 Hon. Noël Dorion, October 11, 1960
 Hon. Walter Dinsdale, October 11, 1960
 Hon. Jacques Flynn, December 28, 1961
 Hon. Paul Martineau, August 9, 1962
 Hon. Richard Albert Bell, August 9, 1962
 H.E. Rt. Hon. Roland Michener, October 15, 1962
 Hon. Marcel-Joseph-Aimé Lambert, February 12, 1963
 Hon. Théogène Ricard, March 18, 1963
 Hon. Frank Charles McGee, March 18, 1963
 Hon. Martial Asselin, March 18, 1963
 Hon. Walter Lockhart Gordon, April 22, 1963
 Hon. Mitchell William Sharp, April 22, 1963
 Hon. Azellus Denis, April 22, 1963
 Hon. George James McIlraith, April 22, 1963
 Hon. William Moore Benidickson, April 22, 1963
 Hon. Arthur Laing, April 22, 1963
 Hon. Maurice Lamontagne, April 22, 1963
 Hon. Lucien Cardin, April 22, 1963
 Hon. Allan Joseph MacEachen, April 22, 1963
 Hon. Jean-Paul Deschatelets, April 22, 1963
 Hon. Hédard Robichaud, April 22, 1963
 Hon. John Watson MacNaught, April 22, 1963
 Hon. Roger Teillet, April 22, 1963
 Hon. Judy V. LaMarsh, April 22, 1963
 Hon. Charles Mills Drury, April 22, 1963
 Hon. John Robert Nicholson, April 22, 1963
 Hon. Harry Hays, April 22, 1963
 Hon. John Joseph Connolly, February 3, 1964
 Hon. Maurice Sauvé, February 3, 1964
 Hon. Yvon Dupuis, February 3, 1964
 Hon. George Stanley White, June 25, 1964
 Hon. Major James William Coldwell, June 25, 1964
 Hon. Edgar John Benson, June 29, 1964
 Hon. Léo Alphonse Joseph Cadieux, February 15, 1965
 Hon. Lawrence T. Pennell, July 7, 1965
 Hon. Jean-Luc Pepin, July 7, 1965
 Hon. Alan Aylesworth Macnaughton, October 25, 1965
 Hon. Jean Marchand, December 18, 1965
 Hon. John James Greene, December 18, 1965
 Hon. Joseph Julien Jean-Pierre Côté, December 18, 1965
 Hon. John Napier Turner, December 18, 1965
 Hon. Maurice Bourget, February 22, 1966
 Rt. Hon. Pierre Elliott Trudeau, April 4, 1967
 Hon. Joseph-Jacques-Jean Chrétien, April 4, 1967
 Hon. Pauline Vanier, April 11, 1967
 Hon. John Parmenter Robarts, July 5, 1967
 Hon. Louis-J. Robichaud, July 5, 1967
 Hon. Dufferin Roblin, July 5, 1967
 Hon. William Andrew Cecil Bennett, July 5, 1967
 Hon. Alexander B. Campbell, July 5, 1967
 Hon. Ernest Charles Manning, July 5, 1967
 Hon. Joseph Robert Smallwood, July 5, 1967
 Hon. Robert L. Stanfield, July 7, 1967
 Rt. Hon. John Robert Cartwright, September 4, 1967
 Hon. Charles Ronald McKay Granger, September 25, 1967
 Hon. Bryce Stuart Mackasey, February 9, 1968
 Hon. Donald Stovel Macdonald, April 20, 1968
 Hon. John Carr Munro, April 20, 1968
 Hon. Gérard Pelletier, April 20, 1968
 Hon. Jack Davis, April 26, 1968
 Hon. Horace Andrew Olson, July 6, 1968
 Hon. Jean-Eudes Dubé, July 6, 1968
 Hon. Stanley Ronald Basford, July 6, 1968
 Hon. Donald Campbell Jamieson, July 6, 1968
 Hon. Eric William Kierans, July 6, 1968
 Hon. Robert Knight Andras, July 6, 1968
 Hon. James Armstrong Richardson, July 6, 1968
 Hon. Otto Emil Lang, July 6, 1968
 Hon. Sydney John Smith, October 10, 1968
 Hon. Herbert Eser Gray, October 20, 1969
 Hon. Robert Douglas George Stanbury, October 20, 1969

Rt. Hon. Joseph Honoré G  rald Fauteux, March 23, 1970
 Hon. Jean-Pierre Goyer, December 22, 1970
 Hon. Alastair William Gillespie, August 11, 1971
 Hon. Martin Patrick O'Connell, August 11, 1971
 Hon. Patrick Morgan Mahoney, January 21, 1972
 Hon. Stanley Haidasz, November 27, 1972

Hon. Eugene F. Whelan, November 27, 1972
 Hon. Warren Allmand, November 27, 1972
 Hon. J. Hugh Faulkner, November 27, 1972
 Hon. Andr   Ouellet, November 27, 1972
 Hon. Daniel J. MacDonald, November 27, 1972
 Hon. Marc Lalonde, November 27, 1972
 Hon. Jeanne Sauv  , November 27, 1972.

The Prime Minister is the leader of the political party requested by the Governor General to form the government, which almost always means that he is the leader of the party with the strongest representation in the House of Commons. His position is one of exceptional authority stemming in part from the success of the party at an election. The Prime Minister chooses his Cabinet. When a member of Cabinet resigns, the remainder of the Cabinet is undisturbed; when the Prime Minister vacates his office, this act normally carries with it the resignation of all those in the Cabinet.

One source of the authority of the Prime Minister lies in his prerogative to recommend the dissolution of Parliament. This prerogative, which in most circumstances permits him to precipitate an election, is a source of considerable power both in his dealings with his colleagues and with the opposition parties in the House of Commons.

Another source of the Prime Minister's authority derives from the appointments which he recommends including Privy Councillors, Cabinet Ministers, Lieutenant Governors of the provinces, provincial administrators, Speakers of the Senate, Chief Justices of all courts, senators and certain senior executives of the Public Service. The Prime Minister also recommends the appointment of a new Governor General to the Sovereign, although this normally follows consultation with his Cabinet.

Following are the Prime Ministers since Confederation, with dates of administrations:

Rt. Hon. Sir John Alexander Macdonald, July 1, 1867—November 5, 1873
 Hon. Alexander Mackenzie, November 7, 1873—October 16, 1878
 Rt. Hon. Sir John Alexander Macdonald, October 17, 1878—June 6, 1891
 Hon. Sir John Joseph Caldwell Abbott, June 16, 1891—November 24, 1892
 Rt. Hon. Sir John Sparrow David Thompson, December 5, 1892—December 12, 1894
 Hon. Sir Mackenzie Bowell, December 21, 1894—April 27, 1896
 Rt. Hon. Sir Charles Tupper, May 1, 1896—July 8, 1896
 Rt. Hon. Sir Wilfrid Laurier, July 11, 1896—October 6, 1911
 Rt. Hon. Sir Robert Laird Borden, October 10, 1911—October 12, 1917 (Conservative Administration)
 Rt. Hon. Sir Robert Laird Borden, October 12, 1917—July 10, 1920 (Unionist Administration)
 Rt. Hon. Arthur Meighen, July 10, 1920—December 29, 1921 (Unionist — National Liberal and Conservative Party)
 Rt. Hon. William Lyon Mackenzie King, December 29, 1921—June 28, 1926
 Rt. Hon. Arthur Meighen, June 29, 1926—September 25, 1926
 Rt. Hon. William Lyon Mackenzie King, September 25, 1926—August 6, 1930
 Rt. Hon. Richard Bedford Bennett, August 7, 1930—October 23, 1935
 Rt. Hon. William Lyon Mackenzie King, October 23, 1935—November 15, 1948
 Rt. Hon. Louis Stephen St. Laurent, November 15, 1948—June 21, 1957
 Rt. Hon. John George Diefenbaker, June 21, 1957—April 22, 1963
 Rt. Hon. Lester Bowles Pearson, April 22, 1963—April 20, 1968
 Rt. Hon. Pierre Elliott Trudeau, April 20, 1968—...

The Cabinet. The Cabinet's primary responsibility in the Canadian political system is to determine priorities among the demands expressed by the people and to define policies to meet those demands. The Cabinet is a committee of Ministers chosen by the Prime Minister, generally from among members of the House of Commons, although one or two Cabinet Ministers are usually chosen from the Senate including the Leader of the Government in the Senate. It is unusual for a senator to head a department of government because the Constitution provides that measures for appropriating public funds or imposing taxes must originate in the House of Commons. If a senator headed a department another Minister in the House of Commons would have to speak on his behalf in respect of its affairs.

As at August 8, 1974, the following were members of the 20th Ministry:

Prime Minister, Rt. Hon. Pierre Elliott Trudeau
 Leader of the Government in the Senate, Hon. Raymond Perrault
 Secretary of State for External Affairs, Hon. Allan J. MacEachen

President of the Queen's Privy Council for Canada, Hon. Mitchell William Sharp
 President of the Treasury Board, Hon. Joseph-Jacques-Jean Chretien
 Minister of Transport, Hon. Jean Marchand
 Minister of Finance, Hon. John Napier Turner
 Minister of Indian Affairs and Northern Development, Hon. Judd Buchanan
 Minister of Energy, Mines and Resources, Hon. Donald Stovel Macdonald
 Minister of Labour, Hon. John Carr Munro
 Minister of Communications, Hon. Gérard Pelletier
 Minister of the Environment, Hon. Jeanne Sauvé
 Minister of Public Works and Minister of State for Science and Technology, Hon. Charles Mills Drury
 Minister of State for Urban Affairs, Hon. Barnett Danson
 Minister of Regional Economic Expansion, Hon. Donald Campbell Jamieson
 Minister of Manpower and Immigration, Hon. Robert Knight Andras
 Minister of National Defence, Hon. James Armstrong Richardson
 Minister of Justice and Attorney General of Canada, Hon. Otto Emil Lang
 Minister of Consumer and Corporate Affairs, Hon. André Ouellet
 Minister of National Revenue, Hon. Stanley Ronald Basford
 Minister of Supply and Services and Receiver General of Canada, Hon. Jean-Pierre Goyer
 Minister of Industry, Trade and Commerce, Hon. Alastair William Gillespie
 Minister of Agriculture, Hon. Eugene Francis Whelan
 Solicitor General of Canada, Hon. Warren Allmand
 Secretary of State of Canada, Hon. James Hugh Faulkner
 Postmaster General, Hon. Bryce Mackasey
 Minister of Veterans Affairs, Hon. Daniel Joseph MacDonald
 Minister of National Health and Welfare, Hon. Marc Lalonde
 Minister of State (Fisheries), Hon. Roméo Leblanc.

Each Cabinet Minister usually assumes responsibility for one of the departments of government, although a Minister may hold more than one portfolio at the same time or he may hold one or more portfolios and one or more acting portfolios. A Minister without portfolio may be invited to join the Cabinet because the Prime Minister wishes to have him in the Cabinet without the heavy duties of running a department, or he may be invited to join the Cabinet to provide a suitable balance of regional representation. Because of the cultural and geographical diversity that exists in Canada, it is necessary for the Prime Minister to give more attention to the representational aspect of his Cabinet than is necessary for his counterparts in many other countries.

With the enactment of the Ministries and Ministers of State Act (Government Organization Act, 1970), four categories of Ministers of the Crown may be identified: departmental Ministers, Ministers without portfolio, and two types of Ministers of state. Ministers of state "for designated purposes" may occupy an office created by proclamation. They are charged with responsibilities for developing new and comprehensive policies in areas where the development of such policies is of particular urgency and importance and have a mandate effectively determined by the Governor in Council which would be of such duration as to enable them to come to grips with the policy problems assigned to them. They may receive powers, duties and functions and exercise supervision and control of relevant elements of the Public Service, and may seek parliamentary appropriations independently of any Minister to cover the cost of their staff and operations. Other Ministers of state may be appointed to assist a departmental Minister in the discharge of his responsibilities. They may receive statutory powers, duties and functions and are limited in number by the appropriations that Parliament is willing to pass. They receive the same salary as a Minister without portfolio, as provided for in the estimates of the Minister with whom they are associated. Ministers in all four categories are appointed on the advice of the Prime Minister by commission under the Great Seal of Canada, to serve at pleasure, and to be accountable to Parliament as members of the government and for any responsibility that might be assigned to them by law or otherwise.

In Canada, almost all executive acts of the government are carried out in the name of the Governor in Council. The Committee of the Privy Council makes submissions to the Governor General for his approval, and he is bound by the Constitution in nearly all circumstances to accept them. About 3,650 such Orders in Council were enacted in 1972 and 4,618 in 1973. Although some were fairly routine and did not require much discussion in Cabinet of the policy underlying them, others were of major significance and required extensive deliberation,

sometimes covering months of meetings of officials and Cabinet committees, as well as of the full Cabinet.

In addition to the determination of the policy underlying the executive acts of the government, there are hundreds of other policy issues that must be resolved during the course of a year. Cabinet must consider and approve the policy underlying each piece of proposed legislation. After it is drafted proposed legislation must be examined in detail so that each clause and punctuation mark receives Cabinet approval. Recently, between 40 and 60 bills have been considered by Cabinet during the course of a parliamentary session. Proposals for sweeping reform of large areas of government organization or administration and policy to be adopted in fundamental constitutional changes or at a major international conference are among the issues which, on occasion, demand this extensive and detailed consideration.

The Cabinet committee system. It is clear that the nature and volume of policy issues to be decided on by Cabinet do not lend themselves to discussion by 25 or 30 Ministers. The first Cabinet committee system was established after the outbreak of World War II but, since that time and more particularly in recent years, growing demands placed on the executive have stimulated the development of new approaches to the delegation of some Cabinet functions to sub-committees.

Cabinet committees tend to have a membership of fewer than 10 Ministers and therefore provide a forum capable of ensuring thorough study of policy proposals. The membership of Cabinet committees is confidential and the same rules of secrecy that apply to the deliberations of Cabinet apply to those of Cabinet committees. Otherwise, these committees might develop an importance and authority of their own which would be inconsistent with the principle of the collective responsibility of Ministers. The Prime Minister determines the establishment of Cabinet committees and their composition and terms of reference. Ministers may invite one or two officials to act as advisers during Cabinet committee meetings. The secretariats of the Cabinet committees are provided by the Privy Council Office and the Secretary of a Cabinet committee is usually also an Assistant Secretary to the Cabinet. Treasury Board, which is a Cabinet committee — or more precisely a sub-committee of the Committee of the Privy Council — is the only exception; it has its own secretariat headed by a secretary who has the status of a Deputy Minister.

Under the direction of the Prime Minister, the Secretary to the Cabinet prepares agenda and refers memoranda to Cabinet to the appropriate committee for study and report to the full Cabinet. Except where the Prime Minister instructs otherwise, all memoranda to Cabinet are submitted over the signature of the Minister concerned.

The terms of reference of Cabinet committees cover virtually the total area of government responsibility. All memoranda to Cabinet are first considered by a Cabinet committee, except when they are of exceptional urgency or when the Prime Minister directs otherwise, in which case an item may be considered immediately by the full Cabinet.

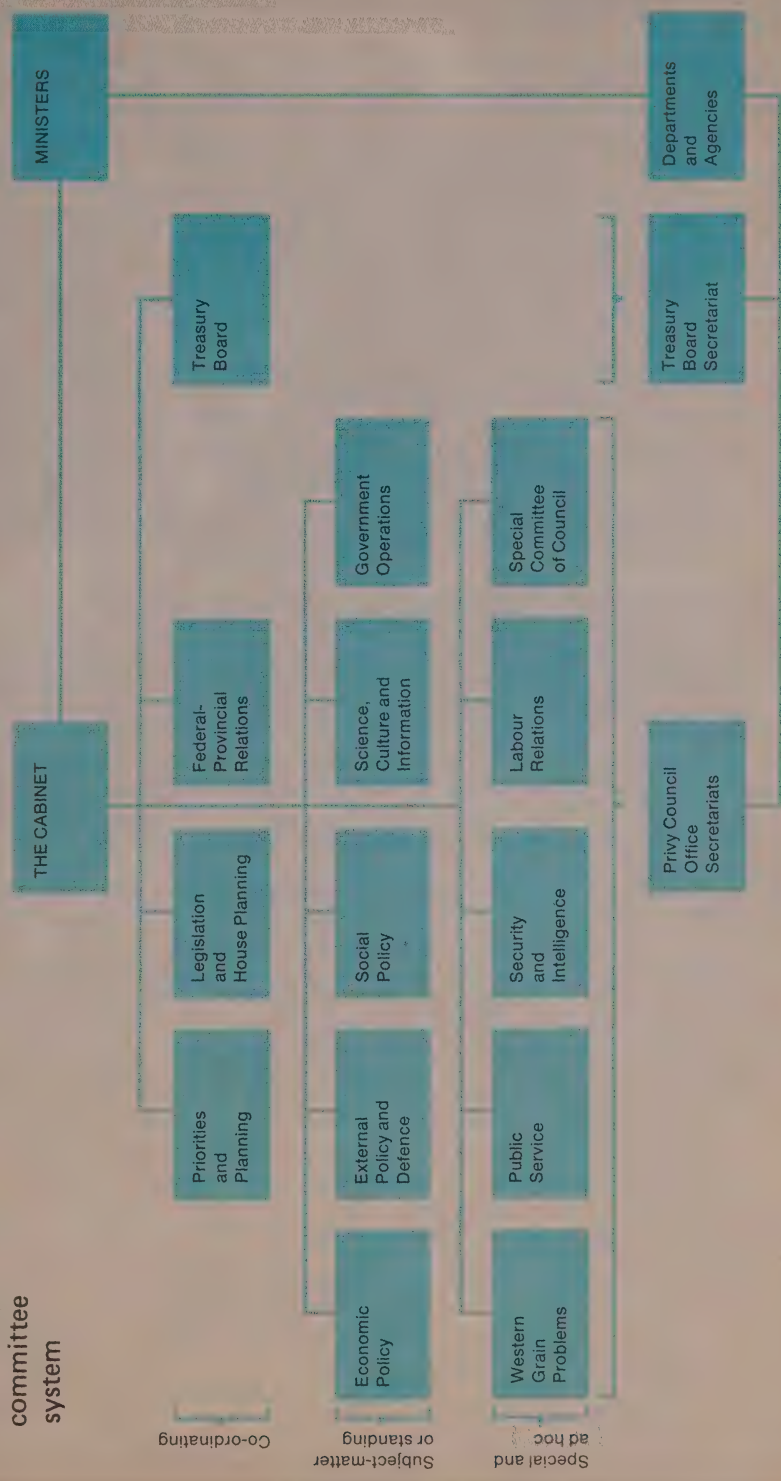
In 1973 there were four co-ordinating committees: Priorities and Planning; Legislation and House Planning; Federal-Provincial Relations; and Treasury Board and five subject-matter committees: Economic Policy; External Policy and Defence; Social Policy; Science, Culture and Information; and Government Operations. These committees meet regularly.

In addition there are five special committees of the Cabinet which meet as required: the Special Committee of Council which considers all submissions to the Governor in Council on behalf of the Committee of the Privy Council, and the Cabinet committees on the Public Service, Security and Intelligence, Labour Relations and Western Grain Problems. The accompanying chart indicates the relationship of these committees to the Cabinet process.

Although the importance of the Cabinet committee system may vary from government to government, evidence of the utility of the system is the growing reliance that has been placed on Cabinet committees since the end of World War II. The following is a brief outline of the involvement of Cabinet and Cabinet committees in respect of a piece of legislation that the government ultimately introduces in the House of Commons or the Senate.

Either on the initiative of a Minister or his departmental officials, a policy proposal is prepared, the implementation of which will require new legislation or the amendment of existing legislation. The proposal is submitted over the Minister's signature for consideration by the appropriate subject-matter committee. If approval is given, the proposal goes forward to Cabinet for confirmation. If Cabinet confirms the Committee's decision, the Department of

The Cabinet committee system



Justice is instructed by the Minister who made the proposal to prepare a draft bill expressing in legal terms the intent of the policy proposal. If the draft bill meets with the Minister's approval, he submits it to the Cabinet Committee on Legislation and House Planning where it is examined from a legal rather than a policy point of view. If the Committee agrees that the bill is acceptable in all respects and could be introduced in Parliament, it so reports to Cabinet and Cabinet decides whether to confirm the Committee's decision. If confirmation is given, the Prime Minister initials the bill and it is then introduced either in the Senate or the House of Commons, depending on constitutional and political considerations.

The order and manner in which a bill is considered in Parliament is the responsibility of the President of the Privy Council and House Leader who negotiates these matters with his counterparts in the opposition parties. If a bill is to be introduced in the Senate, the House Leader will discuss questions such as timing and tactics with the Leader of the Government in the Senate, who in turn will negotiate consideration of the bill with his counterpart in the Senate.

The Privy Council Office is a secretariat providing staff support to the Select Committee of the Privy Council and to the Cabinet. For the purposes of the Financial Administration Act it is considered a department of government. The Privy Council Office provides secretariats to serve the Cabinet, the Select Committee of the Privy Council and their various sub-committees. Since the Prime Minister is, in effect, chairman of the Cabinet, he is the Minister responsible for the Privy Council Office. The work of the Privy Council Office is directed by a public servant known as the Clerk of the Privy Council and Secretary to the Cabinet. He is the senior member of the Public Service.

Parliamentary secretaries. The Parliamentary Secretaries Act of June 1959 provided for the appointment of 16 parliamentary secretaries from among the members of the House of Commons to assist Ministers in the performance of their duties. That Act was amended by the Government Organization Act, 1970, which allows the number of parliamentary secretaries to equal the number of Ministers who hold offices listed in Section 4 of the Salaries Act (i.e. Ministers with departmental responsibilities, the Prime Minister and the President of the Privy Council). A parliamentary secretary works under the direction of his Minister and has no legal authority in respect of the department with which he is associated, nor is he given acting responsibility or any of the powers, duties and functions of a Minister in the event of his Minister's absence or incapacity. Parliamentary secretaries are appointed by the Prime Minister and hold office for 12 months.

At October 1, 1974, the following parliamentary secretaries, listed with their Ministers, were in office. The names of some of the parliamentary secretaries given below do not appear in the list of members of the House of Commons given in Table 3.4. These individuals were elected to Parliament at the July 8, 1974 general election while the detailed information required to bring Table 3.4 up to date was not available at the time of preparation of this chapter.

John M. Reid to President of the Privy Council

Herb Breau to Secretary of State for External Affairs

Charles Turner to Minister of State for Science and Technology and Minister of Public Works

Cliff McIsaac to Minister of Transport

Bud Cullen to Minister of Finance

Raynald Guay to Postmaster General

Maurice Foster to Minister of Energy, Mines and Resources

Mark MacGuigan to Minister of Labour

Joseph Guay to Minister of Regional Economic Expansion

William Rompkey to Minister of Manpower and Immigration

Leonard Hopkins to Minister of National Defence

Gilles Marceau to Minister of Justice

Gaston Clermont to Minister of Industry, Trade and Commerce

Léopold Corriveau to Minister of Agriculture

Gustave Blouin to Secretary of State

Norman Cafik to Minister of Consumer and Corporate Affairs

Coline Campbell to Minister of National Health and Welfare

Leonard Marchand to Minister of the Environment

Pierre De Bané to Minister of State for Urban Affairs

Iona Campagnolo to Minister of Indian Affairs and Northern Development.

3.1.2 The Legislature

The federal legislative authority is vested in the Parliament of Canada consisting of the Queen, an upper house called the Senate, and the House of Commons. Bills may originate in either the Senate or the House, subject to the provisions of Section 53 of the British North America (BNA) Act, 1867, which provides that bills for the appropriation of any part of the public revenue or the imposition of any tax or impost shall originate in the House of Commons. Bills must pass both Houses and receive Royal Assent before becoming law. In practice, most public bills originate in the House of Commons although, at the request of the government, more have recently been introduced in the Senate in order that bills may be dealt with there while the Commons is engaged in other matters such as the debate on the Speech from the Throne. Private bills usually originate in the Senate. The Senate may delay, amend or even refuse to pass bills sent to it from the Commons, but differences are usually settled without serious conflict.

Section 91 of the BNA Acts, 1867 to 1964, assigns to the Parliament of Canada legislative authority in very clearly specified areas. These are discussed in detail in Chapter 2.

Under Section 95, the Parliament of Canada may make laws in relation to agriculture and immigration concurrently with provincial legislatures although federal legislation is paramount in the event of conflict. An amendment to the BNA Act in 1951 (Br. Stat. 1950-51, c.32) authorized the Parliament of Canada to make laws in relation to old age pensions in Canada subject to the proviso that no such law should affect the operation of any provincial laws in relation to old age pensions. By the BNA Act, 1964 this amendment was extended to permit the payment of supplementary benefits, including survivors and disability benefits irrespective of age, under a contributory pension plan.

The passage of legislation. If a bill is introduced in the House of Commons and approved there, it is then introduced in the Senate and follows a similar procedure. If a bill is first introduced in the Senate, the reverse procedure is followed. There are three types of bills: public bills introduced by the government; public bills introduced by private members of Parliament; and private bills introduced by private members of Parliament. Each type is treated in a slightly different manner, and there are even differences in procedure when the House deals with government bills introduced pursuant to “supply” and “ways and means” motions on the one hand, and other government bills on the other. The following outline describes the procedure for a government bill introduced in the House of Commons.

The sponsoring Minister gives notice that he intends to introduce a bill on a given subject. Not less than 48 hours later he moves for leave to introduce the bill and that the bill be given first reading. This is granted automatically because this first step does not imply approval of any sort and it is only after first reading that the bill is ordered printed for distribution to the members.

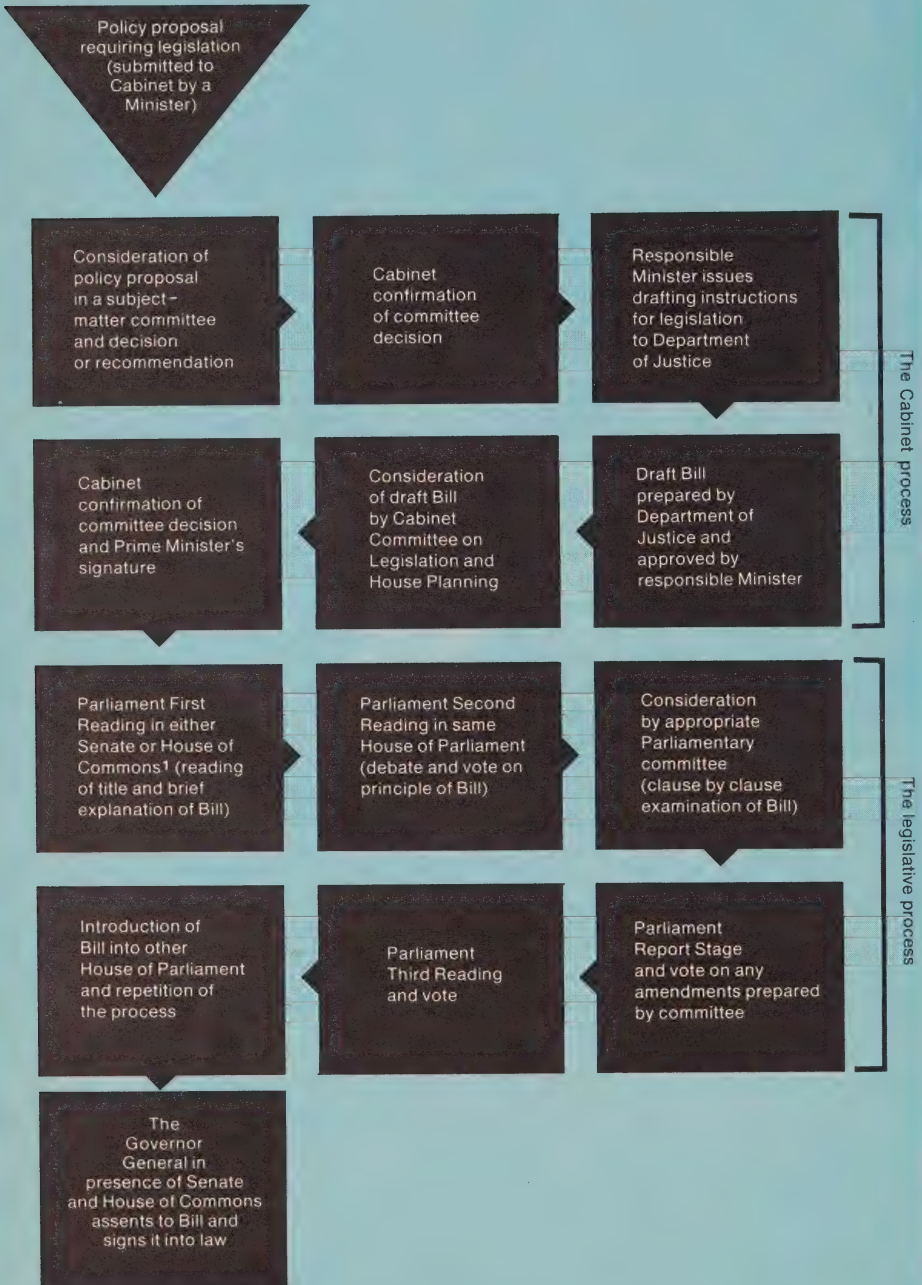
At a later sitting the Minister moves that the bill be given second reading and that it be referred to an appropriate committee of the House of Commons. A favourable vote on the motion for second reading represents approval of the bill in principle so there is often an extensive debate, which, according to the procedures of the House of Commons, must be confined to the principle of the bill. The debate culminates in a vote which, if favourable, results in the bill being referred to the appropriate committee of the House, where it is given clause-by-clause consideration.

At the committee stage, expert witnesses and interested parties may be invited to give testimony pertaining to the bill, and the proceedings may cover many weeks.

The House committee then prepares a report which it submits to the House of Commons which must then decide whether to accept the committee’s report, including any amendments that the committee has made to the bill. At the report stage any member may, on giving 24 hours notice, move an amendment to the bill, and all such amendments are debated and are usually put to a vote. Following that, a motion “that the bill be concurred in” or “that the bill, as amended, be concurred in”, is put to the vote.

Following this report stage, the Minister moves that the bill be given third reading and passage. Debate of this motion is limited to whether the bill should be given third reading. Amendments are permitted at this stage but they must be of a general nature, similar to those allowed on second reading. If the vote is favourable, the bill is then introduced in the Senate where it goes through a somewhat similar process. Since each House has its own rules of pro-

Passage of legislation



1. All money Bills must be introduced in the House of Commons.

cedure, the processes in the two may not be identical, and are indeed not identical at this time. At the end of this procedure, the bill is presented to the Governor General for Royal Assent and for his signature. Depending on the provisions in the bill itself it may come into force when it is signed by the Governor General, on an appointed day, or when it is officially proclaimed.

Duration and sessions of Parliaments. The length and sessions of the first to the 12th Parliaments, covering the period from Confederation to 1917, are given in the *1940 Canada Year Book*, p 46; of the 13th to the 17th Parliaments in the 1945 edition, p 53; of the 18th and 19th Parliaments in the 1957-58 edition, p 46; of the 20th to the 23rd Parliaments in the 1965 edition, p 65; and of the 24th to the 29th Parliaments in this edition, Table 3.1.

The Senate has grown from an original membership of 72 at Confederation, through the addition of members to represent new provinces and the general increase in population, to a total of 102 members; the latest change in representation was made when Newfoundland entered Confederation in 1949. The growth of representation in the Senate is summarized by province in Table 3.2.

Senators are appointed by the Governor General by instrument under the Great Seal of Canada. By constitutional usage the actual power of nominating senators resides in the Prime Minister whose advice the Governor General accepts in this regard. Until the passage of "An Act to make provision for the retirement of members of the Senate" (SC 1965, c.4), assented to on June 2, 1965, senators were appointed for life; that Act set 75 years as the age at which any person appointed to the Senate after the coming into force of the bill would cease to hold his place in the Senate.

In each of the four main areas of Canada (Ontario, Quebec, Atlantic Provinces and Western Provinces) except Quebec, senators represent the whole of the province for which they are appointed; in Quebec, one senator is appointed for each of the 24 electoral divisions of what was formerly Lower Canada. The deliberations of the Senate are presided over by a Speaker appointed by the Governor in Council (in effect by the government) and government business in the Senate is sponsored by the Government Leader in the Senate.

The powers of the Senate, in all respects except one, are co-extensive with those of the House of Commons. The one exception is that under the Canadian Constitution all "money bills", i.e. bills to impose taxes or appropriate public moneys, must originate in the House of Commons. The concurrence of the Senate is necessary before any piece of legislation, public or private, can become law. Government bills, other than money bills, may be introduced in either House. A substantial percentage of these are now introduced in the Senate where they may be freely discussed and amended and the House of Commons thus given the benefit of their prior scrutiny by the Senate.

The Senate also retains its traditional role in respect of legislation originating in the House of Commons, namely, to take a "sober second look" at such legislation and amend it if necessary; such amendments are often concurred in by the House of Commons. If representatives of the two Houses cannot resolve disagreements arising from Senate amendments, the legislation cannot be further considered.

The Senate provides a national forum for the discussion of public issues and the airing of grievances from any part of Canada. Through its own committees and its participation in joint committees of both Houses the Senate is particularly active in making studies in depth on matters of public concern.

As at December 31, 1973 the following were members of the Senate:

Speaker, Hon. Muriel McQueen Fergusson

Leader of the Government, Hon. Paul Martin

Leader of the Opposition, Hon. Jacques Flynn

Clerk of the Senate and Clerk of the Parliaments, Robert Fortier

Newfoundland

Michael G. Basha

Eric Cook

Chesley William Carter

James Duggan

William John Petten

Frederick William Rowe

Prince Edward Island

Florence Elsie Inman

Orville Howard Phillips

Thomas Joseph Kickham

M. Lorne Bonnell

Nova Scotia

Donald Smith
Harold Connolly
Frederick Murray Blois
John Michael Macdonald
Frank C. Welch
Margaret Norrie
Henry D. Hicks
Bernard Alasdair Graham
2 vacancies

New Brunswick

George Percival Burchill
Muriel McQueen Fergusson
Fred A. McGrand
Edgar Fournier
Charles Robert McElman
Hervé J. Michaud
Michel Fournier
Louis-J. Robichaud
Daniel Riley
1 vacancy

Quebec

Léon Mercier Gouin
Sarto Fournier
Hartland de Montarville Molson
J. Eugène Lefrançois
Josie Alice Dinan Quart
Louis Philippe Beaubien
Jacques Flynn
Maurice Bourget
Louis P. Gélinas
Romuald Bourque
Azellus Denis
Jean-Paul Deschatelets
Alan Aylesworth Macnaughton
J.G. Léopold Langlois
Paul Desruisseaux
Maurice Lamontagne
Raymond Eudes
Louis de Gonzague Giguère
Paul C. Lafond
H. Carl Goldenberg
Renaude Lapointe
Martial Asselin
Jean-Pierre Côté
Maurice Riel

Ontario

Salter Adrian Hayden
Norman McLeod Paterson
John J. Connolly

David A. Croll
Joseph A. Sullivan
Lionel Choquette
M. Grattan O'Leary
Allister Grosart
David James Walker
Rhéal Belisle
Daniel Aiken Lang
John Black Aird
William Moore Benidickson
Douglas Keith Davey
Andrew Ernest Thompson
Keith Laird
Richard James Stanbury
Paul Martin
Eugene A. Forsey
George James McIlraith
John James Greene
Joan Neiman
John Morrow Godfrey
1 vacancy

Manitoba

J. Campbell Haig
Paul Yuzyk
Douglas Donald Everett
Gildas L. Molgat
William C. McNamara
1 vacancy

Saskatchewan

William Albert Boucher
Alexander Hamilton McDonald
Hazen Robert Argue
Herbert Orville Sparrow
Sidney L. Buckwold
1 vacancy

Alberta

Donald Cameron
Earl Adam Hastings
Harry William Hays
James Harper Prowse
Ernest C. Manning
1 vacancy

British Columbia

Ann Elizabeth Haddon Heath
Edward M. Lawson
George Clifford van Roggen
Guy Williams
Arthur Laing
Raymond Joseph Perrault.

The House of Commons. Following the 1971 Census the number of members in the House of Commons was determined by the Representation Commissioner in accordance with Section 51 of the British North America Act. The number of seats awarded each province is as follows: Ontario 91, Quebec 72, Nova Scotia 10, New Brunswick 10, Manitoba 12, British Columbia 26, Prince Edward Island four, Saskatchewan 12, Alberta 19, Newfoundland six.

The Yukon Territory and the Northwest Territories are allocated one member each, bringing the total representation in the House of Commons to 264.

The readjustment of the federal electoral districts took place during 1972 and 1973 in accordance with the Electoral Boundaries Readjustment Act and the last of 10 reports was sub-

mitted to the House of Commons early in July 1973. After debate in the House of Commons it was agreed to suspend the readjustment until January 1, 1975. To this effect, Bill C-208 "Electoral Boundaries Readjustment Suspension Act" was given Royal Assent on July 27, 1973.

The number of representatives of each province elected at each of the 29 general elections since Confederation is given in Table 3.3. Historical data concerning representation may be found in the *1973 Canada Year Book*.

Salaries, allowances and pensions. Members of the Senate and House of Commons receive a sessional allowance at the rate of \$18,000 per annum. In addition, for each session of Parliament, they may be paid such travelling expenses between their place of residence or constituency and Ottawa as may be required for the performance of their duties. Senators receive an annual expense allowance of \$4,000 and members of the House of Commons receive an expense allowance of \$8,000 to \$9,650 dependent upon the electoral district represented; neither is subject to income tax and is payable quarterly. Members of the House of Commons may receive up to \$6,000 annually for the payment of staff located in their constituency, and up to \$2,400 annually for rental of premises in their constituency. The member of the Senate occupying the recognized position as Leader of the Government in the Senate is paid, in addition to his sessional allowance, an annual allowance of \$10,000 and the member of the Senate occupying the recognized position as Opposition Leader in the Senate is paid, in addition to his sessional allowance, an annual allowance of \$6,000; but if the Leader of the Government is in receipt of a salary under the Salaries Act the annual allowance is not paid. The remuneration of the Prime Minister is \$25,000 a year and of a Cabinet Minister and the Leader of the Opposition in the House of Commons \$15,000 a year in addition to the sessional and expense allowances each receives as a member of Parliament. A Minister without portfolio is paid \$7,500 a year in addition to the sessional and expense allowances; the latter is not taxable. The Chief Government Whip, the Chief Opposition Whip and each leader of a party having a recognized membership of 12 or more in the House of Commons, other than the Prime Minister and the Leader of the Opposition, receives an annual allowance of \$4,000 in addition to the above-noted sessional allowance. The Speaker of the Senate and the Speaker of the House of Commons each receives, in addition to sessional and expense allowances, a salary of \$9,000 per annum. The Deputy Speaker of the House of Commons receives a salary of \$6,000 per annum. The Speakers of the Senate and of the House of Commons are also entitled to \$3,000 in lieu of residence and the Deputy Speaker of the House of Commons an allowance of \$1,500 in lieu of residence; these allowances are not taxable. The Deputy Chairman of Committees receives an annual allowance of \$4,000. Parliamentary secretaries to Ministers of the Crown receive an annual allowance of \$4,000 a year, in addition to their sessional and expense allowances. A motor vehicle allowance of \$2,000 is paid to each Minister of the Crown and to the recognized Leader of the Opposition in the House of Commons, and a motor vehicle allowance of \$1,000 is paid to the Speakers of the Senate and of the House of Commons; these allowances are not taxable.

A member of Parliament contributes, by reservation, 7.5% of his sessional indemnity toward his retirement allowance, which is based on the average of the sessional indemnity received over the best consecutive six years of his pensionable service accumulated as follows: 3.5% of this six-year average for each of the first 10 years of pensionable service; 3% of this average for each of the next 10 years; 2% of this average for each of the next five years; and 2% of this average for each of the years of pensionable service earned by his contributions from salary for extra duties performed as a Minister, etc.; subject to an over-all maximum of 75% of that best six-year average. Survivor's benefits are as follows: 60% of the member's pension entitlement to the widow or widower; if there is a surviving parent, 10% of the member's pension entitlement for each child up to three; and if there is no surviving parent, 20% of the member's pension entitlement for each child up to four. A member who was a member on March 31, 1970 had a year in which to elect to come under the plan described here or to remain under a previous plan, described in the *1969 Canada Year Book* p 75.

An Act to make provision for the retirement of members of the Senate (SC 1965, c.4) entitles a senator appointed after June 2, 1965 to become a contributor under the provisions of the Members of Parliament Retiring Allowances Act. Senators appointed prior to that date and who have not attained the age of 75 years, who elect under the provisions of this Act, are also

entitled to become contributors. Under the provisions of the Retirement Act, as amended, a senator contributes, by reservation, 6% of \$12,000. A senator appointed before June 2, 1965 who (a) within one year of attaining the age of 75 years resigns his place in the Senate, or (b) resigns due to some permanent infirmity disabling him from performing his duties in the Senate, may be granted an annuity equal to \$8,000. The widow of a person granted such an annuity may receive an annuity equal to three fifths of the annuity to the ex-member of the Senate.

Every former Prime Minister who held office for four years will receive from the Consolidated Revenue Fund an allowance of two thirds of the annual salary provided for Prime Ministers under the Salaries Act, the allowance to commence when a Prime Minister ceases to hold that or any other office in Parliament, or attains the age of 70 years, whichever is the later, and to continue during his lifetime. The widow of a Prime Minister will receive an annual payment of one third of the allowance that was being paid or that would have been paid in the event that he died before receiving the allowance, such allowance to commence immediately after the death of her husband and to continue during her natural life or until her remarriage.

None of these allowances is payable while the recipient remains a senator or a member of the House of Commons.

The federal franchise. The present federal franchise laws are contained in the Canada Elections Act (RSC 1970, c.14, 1st Supp.). Generally, the franchise is conferred upon all Canadian citizens who have attained the age of 18 years and are ordinarily resident in the electoral district on the date fixed for the beginning of the enumeration at the election. British subjects, other than Canadian citizens, who were qualified as electors on June 25, 1968 and have not, since that date, ceased to be ordinarily resident in Canada, are also qualified as electors. This privilege granted to a restricted group of British subjects will terminate at midnight on June 26, 1975. Persons denied the right to vote are: the Chief Electoral Officer and the Assistant Chief Electoral Officer; judges appointed by the Governor in Council; the returning officer for each electoral district; persons undergoing punishment as inmates of any penal institution; persons restrained of their liberty of movement or deprived of the management of their property by reason of mental disease; and persons disqualified under any law relating to the disqualification of electors for corrupt or illegal practices.

The Special Voting Rules set out in Schedule II to the Canada Elections Act prescribe voting procedures for members of the Canadian Forces, for members of the Public Service posted abroad, and also for veterans in receipt of treatment or domiciliary care in certain institutions.

Electoral districts, voters on list, votes polled and names and addresses of members of the House of Commons elected at the 29th general election, October 30, 1972 are given in Table 3.4. Table 3.5 indicates voters on the lists and votes polled at federal general elections in 1963, 1965, 1968 and 1972.

3.1.3 The Judiciary

The Parliament of Canada is empowered by Section 101 of the British North America Act to provide for the constitution, maintenance and organization of a general Court of Appeal for Canada and for the establishment of any additional courts for the better administration of the laws of Canada. Under this provision Parliament has established the Supreme Court of Canada, the Federal Court of Canada and certain miscellaneous courts. A detailed discussion of the judiciary and legal system of Canada is presented in Chapter 2.

3.2 Federal government administration

3.2.1 Financial administration and control

The financial affairs of the Government of Canada are administered and controlled under the basic principle that no tax shall be imposed and no money spent without the authority of Parliament and that expenditures shall be made only for the purposes authorized by Parliament. The most important constitutional provisions relating to Parliament's control of finances are contained in the British North America (BNA) Act which provides that all federal taxing and appropriating measures must originate in the House of Commons. The government is responsible for introducing all money bills. Financial control is exercised through a budgetary system based on the principle that all the financial needs of the government for each fiscal year should be considered at one time so that both the current and prospective conditions of the public treasury may be clearly evident.

Estimates and appropriations. Co-ordination of the estimates process is carried out by Treasury Board. The Secretariat to this Board is a separate department of government, its Minister having the designation of President of the Treasury Board. In addition to the President, the Board consists of the Minister of Finance and four other Privy Councillors. Under the Financial Administration Act, the Board may act for the Privy Council in all matters relating to financial management (including estimates, expenditures, financial commitments, establishments, revenues and accounts), personnel management and general administrative policy in the Public Service.

Under present practice departments submit forecasts of their requirements about 12 months before the beginning of a new fiscal year. Forecasts of what they will require in each of the coming three years to maintain the current levels of service in each program are termed "A Budgets". At the same time departments submit forecasts of requirements for new activities or expansion in existing activities — "B Budgets". These proposals are reviewed by Treasury Board in the light of expenditure guidelines approved by the Cabinet which express the government's priorities. The Treasury Board Secretariat prepares recommendations for the budgetary and non-budgetary allocations to each program for Cabinet review. In August of the year preceding the fiscal year, departments are advised of the allocations approved by Cabinet. Departments then develop detailed estimates of their resource requirements for the new year against these approved allocations. These estimates are submitted at the end of October. Following review by Treasury Board and approval by Cabinet they are tabled in Parliament in February.

Main estimates and supplementary estimates are referred to committees of the House of Commons. The timing of such referrals, the timing of committee reports and all other matters having to do with the business of supply in the House of Commons are regulated by the Standing Orders of the House (October 1969). The relevant provisions are briefly summarized here. Section 58 of the Standing Orders establishes three supply periods ending, respectively, not later than December 10, March 26 and June 30. The first supplementary estimates for a year are usually dealt with in the December 10 period and the final supplementary estimates in the March 26 period. In addition, interim supply (consisting of 3/12ths for all items in estimates and extra 12ths for some items) is dealt with in the March 26 period. In the June 30 period, the House is asked to provide full supply. The Standing Orders call for the referral of the new year main estimates to standing committees of the House by March 1 of the then expiring fiscal year and they must report back to the House not later than May 31 in the then current fiscal year. Supplementary estimates are referred immediately after they are tabled, usually to the Miscellaneous Estimates Committee of the House, and dates by which reports must be made to the House are stipulated. In each supply period a number of days are allotted to the business of supply. Opposition motions have precedence over all government supply motions on allotted days and opportunities to put forward motions of non-confidence in the government are provided. On the last allotted day in each period, at 15 minutes before the ordinary time of adjournment the Speaker interrupts the proceedings then in progress and puts every question necessary to dispose of any business relating to supply. No debate takes place after the Speaker has acted in this way and the Appropriation Acts then before the House must be voted on. These Appropriation Acts authorize payments out of the Consolidated Revenue Fund of the amounts included in the estimates, whether main or supplementary, subject to the conditions stated in them.

In addition to the expenditure items included in the annual Appropriation Acts, there are a number of items, such as interest on the public debt and family allowances, authorized under other statutes. Although it is not necessary for Parliament to approve these items annually, they are included in the main estimates for purposes of information. Statutory provision also exists for the expenditure of public money in emergencies where no parliamentary appropriation is available. Under the Financial Administration Act, the Governor in Council, on the report of the President of the Treasury Board that there is no appropriation for the expenditure and on the report of the appropriate Minister that the expenditure is urgently required, may order a special warrant issued authorizing disbursement of the amount required. Such warrants may be issued only when Parliament is not in session and every warrant must be published in the *Canada Gazette* within 30 days of issue and reported to Parliament within 15 days of assembly. The Fire Losses Replacement Account Act also provides for emergency expenditures for the urgent repair or replacement of property destroyed or damaged by fire,

where there is not sufficient money available in the appropriation for the service suffering loss. Such amounts must be charged subsequently to an appropriation or included in the estimates for the department or agency concerned and refunded to the Fire Losses Replacement Account.

In addition, disbursements are made for purposes not reflected in the budgetary accounts but recorded in the government's statement of assets and liabilities, such as loans to and investments in Crown corporations, loans to international organizations and to national, provincial and municipal governments, and loans to veterans. There are also disbursements in connection with deposit and trust accounts and annuity, insurance and pension accounts which the government holds or administers, including the old age security fund and the Canada Pension Plan fund which are operated as separate entities. These disbursements are excluded from the calculation of the annual budgetary surplus or deficit.

The budget. The Minister of Finance usually presents his annual budget speech in the House of Commons some time after the main estimates have been introduced. The budget speech reviews the state of the national economy and the financial operations of the government for the previous fiscal year and gives a forecast of the probable financial requirements for the year ahead, taking into account the main estimates and making allowances for supplementary estimates. At the close of his address, the Minister tables the formal notices of ways and means motions for any changes in the existing tax rates or rules and customs tariff which, in accordance with parliamentary procedure, must precede the introduction of any money bills. These resolutions give notice of the amendments which the government intends to ask Parliament to make in the taxation statutes. However if a change is proposed in a commodity tax, such as a sales tax or excise duty on a particular item, it is usually made effective immediately; the legislation, when passed, is made retroactive to the date of the speech.

The budget speech is delivered in support of a motion that the House go into committee; debate on this motion may take up six sitting days, but once it is passed the way is clear for consideration of the budget resolutions. When these have been approved by the committee, a report to this effect is made to the House, and the tax bills are introduced and dealt with in the same manner as all other government financial legislation.

Revenues and expenditures. Administrative procedures governing revenues and expenditures are, for the most part, contained in the Financial Administration Act.

With respect to revenues, the basic requirement is that all public money shall be paid into the Consolidated Revenue Fund, which is defined as the aggregate of all public money on deposit to the credit of the Receiver General. The Minister of Supply and Services is the Receiver General for Canada. Treasury Board has prescribed detailed regulations governing the receipt and deposit of such money. The Bank of Canada and the chartered banks are the custodians of public money. Balances are apportioned among the various chartered banks according to a percentage allocation established by agreement among all the banks and communicated to the Department of Finance by the Canadian Bankers' Association. The daily operating account is maintained with the Bank of Canada and the division of funds between it and the chartered banks takes into account the immediate cash requirements of the government and consideration of monetary policy. The Minister of Finance may purchase and hold securities of, or guaranteed by, Canada and pay for them out of the Consolidated Revenue Fund or may sell such securities and pay the proceeds into the Fund. Thus, if cash balances in the Fund exceed immediate requirements they may be invested in interest-earning assets. In addition, the Minister of Finance has established a purchase fund to assist in the orderly retirement of the public debt.

Treasury Board exercises central control over the budgets of departments and over financial administrative matters generally. Although the most important part of this control function is exercised during the annual consideration of departmental long-range plans and of the estimates, the Board has the right to maintain continuous control over certain types of expenditure to ensure that activities and commitments for the future are held within approved policies, that departments follow uniform, efficient and economical practices, and that the government is informed of and approves any major development of policy or significant transaction that might give rise to public or parliamentary criticism.

To ensure enforcement of the decisions of Parliament, the government and Ministers regarding expenditures, the Financial Administration Act provides that no payment shall be

made out of the Consolidated Revenue Fund without the authority of Parliament and no charge shall be made against an appropriation except on the requisition of the appropriate Minister or a person authorized by him in writing. These requisitions, which must meet certain standards prescribed by Treasury Board regulation, are presented to the Receiver General, who makes the payment.

At the beginning of each fiscal year, or whenever Treasury Board may direct, each department, unless otherwise directed by the Board, submits a division into allotments of each vote included in its estimates. Once approved these allotments cannot be varied or amended without the consent of the Board; expenditures charged to appropriations are limited to such allotments. To avoid over-expenditures within a fiscal year, commitments due to be paid within the year for which Parliament has provided or has been asked to provide appropriations are recorded and controlled by the departments concerned. Commitments made under contract that will fall due in succeeding years are recorded since the government must be prepared in the future to ask Parliament for appropriations to cover them. Any unexpended amounts in the annual appropriations lapse at the end of the year for which they are granted, but for 30 days subsequent to March 31 payments may be made and charged to the previous year's appropriations for work performed, goods received or services rendered prior to the end of that fiscal year.

Under the Financial Administration Act, every payment against an appropriation is made by the Receiver General by cheque or other instrument. After presentation for payment, the cheques or instruments are cleared daily by the chartered banks through the Bank of Canada to the Cheque Redemption Control Division of the Receiver General; the banks are then reimbursed through a cheque drawn on the Receiver General's account with the Bank of Canada.

Public debt. In addition to collecting and disbursing public money for budgetary and non-budgetary purposes, the government receives and pays out substantial sums in connection with its public debt operations. The Minister of Finance is authorized to borrow money by the issue and sale of securities at whatever rate of interest and under whatever terms and conditions the Governor in Council approves. Although new borrowings require specific authority of Parliament, the Financial Administration Act authorizes the Governor in Council to approve borrowings as required to redeem maturing or called securities. To ensure that the Consolidated Revenue Fund will be sufficient to meet lawfully authorized disbursements, he may also approve the temporary borrowing of such sums as are necessary for periods not exceeding six months. The Bank of Canada acts as the fiscal agent of the government in the management of the public debt.

Accounts and financial statements. Under the Financial Administration Act, Treasury Board may prescribe the manner and form in which the accounts of Canada and the accounts of individual departments shall be kept. Annually, on or before December 31 or, if Parliament is not then sitting, within any of the first 15 days after Parliament resumes, the *Public accounts*, prepared by the Receiver General, is laid before the House of Commons by the Minister of Finance. The *Public accounts* contains a survey of the financial transactions of the fiscal year ended the previous March 31 and statements of revenues and expenditures and of assets and direct and contingent liabilities, together with other accounts and information required to show the financial transactions and financial position of Canada or which are required by law to be reported in the *Public accounts*. The statement of assets and liabilities included in the *Public accounts* is designed to disclose the amount of the net debt, which is determined by offsetting against the gross liabilities only those assets regarded as readily realizable or interest- or revenue-producing. Fixed capital assets, such as government buildings and public works, are charged to budgetary expenditures at the time of acquisition or construction and are shown on the statement of assets and liabilities at a nominal value of \$1. Monthly financial statements are also published in the *Canada Gazette*.

The Auditor General. The government's accounts are subject to an independent examination by the Auditor General who is an officer of Parliament. With respect to expenditures, this examination is a post-audit to report whether the accounts have been properly kept, the money spent for the purposes for which it was appropriated by Parliament and the expenditures made as authorized; any audit before payment is the responsibility of the requisitioning department

or agency. With respect to revenues, the Auditor General must ascertain that all public money is fully accounted for and that the rules and procedures applied ensure an effective check on the assessment, collection and proper allocation of the revenue. With respect to public property, he must satisfy himself that essential records are maintained and that the rules and procedures applied are sufficient to safeguard and control it. The Auditor General reports the results of his examination to Parliament, calling attention to any case which he considers should be brought to the notice of the House. He also reports to Ministers, the Treasury Board or the government any matter which in his opinion calls for attention so that remedial action may be taken promptly. It is the usual practice to refer the *Public accounts* and the *Auditor General's report* to the House of Commons Standing Committee on Public Accounts, which may review them and report the findings and recommendations to the House of Commons.

3.2.2 Government employment

Treasury Board (a statutory committee of Cabinet) has over-all responsibility for personnel management in the federal Public Service. In this role it is responsible for development and application of personnel policies, systems and methods to ensure that the human resources needed to carry out programs effectively are obtained at competitive prices and used efficiently with due regard for the individual and collective rights of employees.

The Public Service Commission (an independent agency responsible directly to Parliament) ensures that staffing requirements of departments and agencies are met in accordance with the merit principle, operates staff development and training programs, including language training, and establishes appeal boards as provided for in the Public Service Employment Act.

Treasury Board. Under provisions of the amended Financial Administration Act and the Public Service Staff Relations Act, both proclaimed on March 13, 1967, Treasury Board is responsible for the development of policy guidelines, regulations, standards and programs in the areas of classification and pay, conditions of employment, collective bargaining and staff relations, official languages, manpower training, development and utilization, pensions, insurance and other employee benefits and allowances, and other personnel management matters affecting the Public Service.

It is concerned with the development, implementation, maintenance and evaluation of policy guidelines, programs and procedures for the accurate determination, allocation, development and efficient utilization of employees needed in the Public Service to carry out programs effectively. The aim of these measures is to improve the effective use of manpower resources in the Public Service and to this end Treasury Board makes recommendations on organization development, manpower planning, the determination and evaluation of training needs and educational programs, and advises departments and agencies on the design and implementation of systems to improve manpower management.

Treasury Board also develops policy guidelines, programs and regulations on salary administration, benefits and allowances for the Public Service. These functions involve the development and maintenance of classification programs and the associated salary structures. Through delegation, responsibility for classification and the administration of salaries is being transferred progressively to departments, subject to a monitoring process. Benefit programs and allowance policies approved by the Board are designed to give maximum responsibility for administration to departments.

Under the system of collective bargaining established by the Public Service Staff Relations Act, Treasury Board is the employer for all employees in the Public Service, except for certain separate employers such as the National Research Council and the National Film Board. The Board negotiates collective agreements with the unions representing 80 bargaining units and advises departments on their administration. Consultations are held with representatives of bargaining agents, directly or through the National Joint Council, on matters which are not subject to bargaining or which have wide application in the Public Service. The Board determines terms and conditions of employment of employees excluded from collective bargaining, and develops policy guidelines and standards to govern physical working conditions and occupational health and safety. It prepares and presents the employer's position on grievances referred to adjudication, and advises or assists departmental management at preceding stages in the grievance process. The Board presents the position of the employer in applications for certification by employee organizations and in hearings before the Public Service Staff Relations Board on applications for the exclusion of employees from bargaining units.

The Board develops policy guidelines, co-ordinates the administration and recommends periodic revision of pension, insurance and related programs for the Public Service and negotiates reciprocal pension transfer agreements with other public and private employers. It also studies and proposes means of ensuring compatibility between Public Service employee benefits and social security programs such as medicare and the Canada and Quebec Pension Plans.

Treasury Board has the over-all responsibility for developing official languages policy and programs, monitoring their implementation and evaluating their effectiveness within the Public Service, ensuring that they are adequately and effectively communicated, and that activities by government departments and agencies in this area are consistent with stated policy and the Official Languages Act. The Board is also specifically responsible for issuing guidelines to departments to help them identify and prescribe the linguistic requirements of all their positions.

Public Service Commission. The Public Service Employment Act, which became effective on March 13, 1967, continues the status of the Public Service Commission as an independent agency responsible to Parliament. The Commission has the exclusive right and authority to make appointments to and from within the Public Service. The Commission is also empowered to operate staff development and training programs, to assist Deputy Heads in carrying out training and development and in 1972 was charged with investigations into cases of alleged discrimination on grounds of sex, race, national origin, colour or religion in the application and operation of the Public Service Employment Act.

It may establish boards to render decisions on appeals against appointments made from within the Public Service and against release or demotion for incompetence or incapacity, to make recommendations on the revocation of appointments improperly made under delegated authority and to render decisions on allegations of political partisanship.

The Commission grants or withholds approval of applications for leave of absence from public servants who wish to be candidates in federal or provincial elections and conducts investigations into allegations of improper political activities on the part of public servants.

The Act authorizes the Commission to delegate to Deputy Heads any of its powers, except those relating to appeals and inquiries. The Commission has delegated its powers to make appointments in the Operational and Administrative Support Categories; employing departments are required to use the Canada Manpower Centres as their recruitment agency for appointments from outside the Public Service. Delegations of appointing authority in the Administrative and Foreign Service, Technical, and Scientific and Professional categories have been made on a restricted basis. The Commission operates a monitoring program designed to ensure that appointments made under delegated authority comply with the law and with Commission policies.

The Public Service Commission performs its important role as guardian of the merit principle to ensure that high standards of quality are maintained within the Service, consistent with adequate representation of the two official language groups, a bilingual capability to the extent prescribed by the government, equal employment and career development opportunities irrespective of sex, race, national origin, colour or religion, and encouragement of opportunities for disadvantaged people.

Every citizen may apply for positions. Competitive examinations are announced through the news media and posters displayed on public notice boards of major post offices, Canada Manpower Centres, Public Service Commission offices and elsewhere.

The Commission's major task — staffing the Public Service according to merit — is done on an occupational basis. The classification system divides the Service into six broad occupational categories which are further divided into groups of occupationally similar jobs. For each major occupation or group of occupations there is a program of recruitment, selection and placement. Comprehensive manpower planning, developed in co-operation with Treasury Board and employing departments, has been introduced for several occupational groups. Continuous recruitment techniques, utilizing candidate inventories, have been developed and are used when appropriate. Appointments are made from within the Service except where the Commission believes it is in the best interests of the Service to do otherwise. Appointments from within the Service are made either through a formal competition or from an employee inventory. "Data Stream", the Commission's computerized manpower inventory, is the pri-

mary employee inventory for the Executive, Scientific and Professional, Technical and the Administrative and Foreign Service categories. Under the Public Service Employment Act, public servants who are candidates in a competition open to all or part of the Service may appeal the selections made as a result of the competition to the Public Service Commission.

When a promotion is made without competition, those who would have been eligible to apply if a competition had been held may appeal. Public servants may also appeal the decision of a Deputy Head to recommend release or demotion because of incompetence or incapacity.

Consistent with the growing emphasis on managerial development and continuing education, the Public Service Commission offers interdepartmental courses in government administration, occupational training and management improvement. The Commission acts as the consultant and adviser to Deputy Heads on training matters and the training and development facilities of the Commission are available to employees to train them for specific occupations or for promotion within the administrative and managerial ranks.

In order that departments may perform their functions effectively and serve the public in accordance with the Official Languages Act, the Commission ensures that employees appointed are qualified in the knowledge and use of English or French or both. The Commission exercises specific responsibilities in the areas of language training, research and the development of selection standards with regard to the linguistic requirements of positions and groups of positions within the federal Public Service. It must establish the method of assessing language knowledge and it must also establish the degree of language knowledge or proficiency possessed by candidates for positions.

The formulation of appropriate selection standards is to be determined in accordance with the decisions of the individual Deputy Heads with respect to the linguistic requirements of positions and groups of positions.

3.2.3 Immigration

The Canada Immigration Division of the Department of Manpower and Immigration administers the Immigration Act and Regulations. The Programs and Procedures Branch is responsible for long- and short-range planning of immigration policies, co-ordination of immigration policies developed internally, functional support for the transportation and reception of immigrants in Canada and liaison with transportation companies. The Home Services Branch is responsible for handling individual immigration cases, directing the Canadian immigration field staff, formulating policies and guidelines on the enforcement of immigration operations and providing technical advice on procedures relating to the admission of immigrants and non-immigrants. The Foreign Branch is responsible for the management of the overseas service, uniform application of selection standards, promotional activities and implementation of approved programs abroad and the counselling and direction of immigrants.

There are 58 Manpower and Immigration offices outside Canada at Athens, Atlanta, Beirut, Belfast, Belgrade, Berlin, Berne, Birmingham, Bonn, Bordeaux, Boston, Brussels, Budapest, Buenos Aires, Buffalo, Cairo, Cologne, Copenhagen, Chicago, Dallas, Detroit, Dublin, Glasgow, The Hague, Hamburg, Helsinki, Hong Kong, Islamabad, Kingston, Lisbon, London, Los Angeles, Madrid, Manchester, Manila, Marseille, Milan, Minneapolis, Nairobi, New Delhi, New Orleans, New York, Oslo, Paris, Port au Prince, Port of Spain, Rome, San Francisco, Seoul, Seattle, Singapore, Stockholm, Stuttgart, Sydney, Tel Aviv, Tokyo, Vienna and Warsaw. Many of these offices have been assigned responsibilities in countries not serviced by a resident Canadian immigration officer; visits are made to countries and territories within each designated area as the volume of applications warrants. Personnel are kept in touch with economic conditions in Canada and advise immigrants about their prospects of successful establishment in Canada.

Examination of immigrants and visitors is carried out at 547 ports of entry on Canadian coasts, at points along the international boundary and at certain airports and inland offices.

There are two principal objectives of Canada's immigration policy. On one hand it seeks to stimulate economic growth and encourage social and cultural development. Immigrants with the skills required by the Canadian economy are recruited and the temporary entry of non-immigrants whose presence serves these same ends is also arranged. Relatives of Canadian residents or refugees are admitted on humanitarian grounds. On the other hand the policy assists in maintaining Canadian national security, public health and economic and social

welfare by excluding those people from other countries whose presence in Canada would endanger these interests.

The Immigration Regulations describe the criteria potential immigrants must meet to qualify for admission. Since 1967 Canada's immigration policies have been based on non-discrimination and universality; people from all parts of the world have an equal opportunity to qualify for admission to Canada. Considered are such things as the applicant's occupational skills, training, ability and determination to succeed. Details of these regulations and the immigrant selection criteria may be found in previous editions of the *Canada Year Book*. Several recent changes in the regulations are discussed below.

A provision allowing visitors to adjust their status while in this country temporarily came into being with other regulatory changes in October 1967. It was introduced to avoid penalizing persons who had come here as visitors and wished to stay. The right has been withdrawn in the light of evidence that it was being abused, and since November 30, 1972 persons seeking immigrant admission to Canada have been required to make application in advance at an overseas immigration office.

On January 1, 1973 the Minister of Manpower and Immigration introduced regulations designed to control the employment of visitors in Canada and the long-term visits by non-immigrants. The regulations do not affect Canadians or landed immigrants.

The regulations require that no person other than a Canadian citizen or landed immigrant may accept employment in Canada, unless specifically exempted under the regulations, without first obtaining certification from the Canada Manpower service that no Canadian resident is available or willing to take the employment involved. Non-immigrants in Canada as of January 1, 1973 were required to register with an immigration office if they intended to stay beyond April 1, 1973. Any violation of the regulations constitutes an offence under the Immigration Act and can result in fines and/or imprisonment or expulsion from Canada.

On August 15, 1973 a bill was proclaimed that was designed to allow persons in Canada to regularize their immigration status, to reduce the backlog of cases before the Immigration Appeal Board and to modify the appeals system for the future. The bill provided a final opportunity for those who did not have landed immigrant status, and who were in Canada as of November 30, 1972 and had remained here since that time, to apply for landed immigrant status. Individuals had until the following October 15th to register. Unsuccessful applicants retained their full rights of appeal to the Immigration Appeal Board. Those who did not apply forfeited their last opportunity to apply from within Canada for permanent residence and lost future appeal rights. By the deadline 49,900 persons had registered under the program. The legislation also contained a series of permanent amendments to the Immigration Appeal Board Act to prevent a backlog of appeals in the future, and temporary amendments to clear an existing backlog of appeals.

Between September 5 and November 8, 1972 a temporary immigration office was maintained in Kampala, Uganda to handle applications from Ugandan Asians forced by political pressures to leave the country. By December 1973 a total of 7,553 persons had migrated to Canada under this program. Special efforts were also made in 1973 when a change of government in Chile forced many Chileans to leave their country.

3.2.4 Citizenship

The Canadian Citizenship Act (RSC 1970, c.C-19), which came into force on January 1, 1947 replacing previous Naturalization Acts, created the distinct nationality of a "Canadian citizen" to be recognized throughout the world and it provided a means whereby those non-Canadian British subjects and aliens who were permanently residing in Canada or those who might subsequently immigrate to Canada could apply for Canadian citizenship. The Act also provides for reacquisition of Canadian citizenship by natural-born Canadians. Administration of Canadian citizenship is under the jurisdiction of the Department of the Secretary of State, Citizenship Registration Branch.

Natural-born Canadian citizens. The Act conferred natural-born status on two categories of persons on January 1, 1947: those born in Canada or on a Canadian ship or aircraft and who were not aliens on January 1, 1947; and those born of Canadian fathers outside Canada who were not aliens on January 1, 1947 and were either minors on that date or had already entered Canada for permanent residence.

The Act provides that a person born abroad who was a minor on January 1, 1947 automatically ceased to be a Canadian citizen on his 24th birthday or on January 1, 1954, whichever was later, unless he had his place of domicile in Canada at such date or had, before such date and after reaching the age of 21 years, filed a declaration of retention of Canadian citizenship.

A person born outside Canada after December 31, 1946, whose responsible parent is considered a Canadian citizen under the terms of the Canadian Citizenship Act, is a Canadian if his birth is registered with the Registrar of Canadian Citizenship within two years of its occurrence or within such extended period as the Minister may authorize in special cases.

A person who becomes a natural-born Canadian citizen in this manner will automatically cease to be a Canadian citizen if he fails to file a declaration of retention prior to his 24th birthday or does not have his place of domicile in Canada on that date.

Newfoundland and Canadian citizenship. On April 1, 1949 Newfoundland became the 10th province of Canada and every person born therein or naturalized or every British subject who had domicile in Newfoundland on that date or every woman who married a citizen of Newfoundland and took up residence there before April 1, 1949 became a Canadian citizen. They acquired the right of conferring Canadian citizenship by descent on their children born outside Newfoundland in the same manner as those who had previously become Canadians. Persons born outside Newfoundland to Newfoundland parents are natural-born Canadian citizens provided they were either minors on April 1, 1949 or had before that date been lawfully admitted to Canada or Newfoundland for permanent residence. However, a person who was a minor on April 1, 1949 ceased to be a Canadian on his 24th birthday or on July 1, 1968, whichever was later, unless he had his place of domicile in Canada at that date or had filed a declaration of retention of Canadian citizenship after reaching the age of 21 years. A person born outside Canada to Newfoundland parents after March 31, 1949 is a natural-born Canadian if his birth is registered with the Registrar of Canadian Citizenship within two years of its occurrence or within such extended period as the Minister may authorize in special cases. A person who becomes a natural-born Canadian in this manner will automatically cease to be a Canadian citizen if he fails to file a declaration of retention prior to his 24th birthday or does not have his place of domicile in Canada on that date.

Canadian citizens other than natural-born. Before the 1953 amendments to the Citizenship Act, the only persons who acquired Canadian citizenship on January 1, 1947 through the transitional clauses of Section 9 were persons naturalized in Canada before that date, British subjects who had Canadian domicile at the commencement of the Act and women lawfully admitted to Canada and married prior to January 1, 1947 whose husbands would have qualified as Canadian citizens if the Act had come into force before the date of marriage. Section 9 was amended on June 1, 1953 so that a British subject domiciled in Canada for at least 20 years immediately before January 1, 1947 need not comply with the requirements of Canadian domicile provided he was not under an order of deportation on January 1, 1947.

Acquisition of Canadian citizenship by aliens or British subjects. An adult non-Canadian British subject or an alien who wishes to become a Canadian must formally file an application for citizenship. The non-Canadian British subject may file an application direct with the Registrar of Canadian Citizenship, whereas an alien must file an application through his local court, or through one of the special citizenship courts now established or, if he lives more than 50 miles from a court, he may mail his application to the Registrar of Canadian Citizenship in Ottawa, who will file it with the appropriate court.

After the application has been posted for three months, he is called to appear before the court for examination. In either case the same requirements apply: (1) He must have resided in Canada for 12 of the 18 months immediately preceding the date of his application. (2) He must have been lawfully admitted to Canada for permanent residence and either have acquired Canadian domicile before July 7, 1967, or have resided in Canada for five of the eight years immediately preceding the filing of his application. (Persons living in Canada before obtaining landed-immigrant status may count half of each full year before landing toward the residence qualification. The wife of a Canadian needs only to be admitted for permanent residence and reside in Canada for one year.) (3) He must be of good character and not under an order of deportation. (4) He must have an adequate knowledge of either English or French or, alternatively, be the spouse, widow or widower of a Canadian or, either be 40 or more years of

age at the time of lawful admission and have resided in Canada for more than 10 years or be less than 40 at the time of admission and have resided continuously in Canada for more than 20 years. (5) He must have an adequate knowledge of the responsibilities and privileges of citizenship. (6) He must intend to comply with the Oath of Allegiance and to have his place of domicile permanently in Canada.

At the conclusion of the hearing, the decision of the court is forwarded to the Minister responsible for administering the Canadian Citizenship Act. If favourable, a certificate of Canadian citizenship granted by the Minister is forwarded to the clerk of the court who notifies the applicant when to appear before the court to take the Oath of Allegiance, renounce his previous nationality and receive his certificate. Where a court finds that an applicant does not possess the required qualifications, the Minister will advise the applicant and give him notice that he may appeal the decision within 30 days to the Citizenship Appeal Court which is the Trial Division of the Federal Court of Canada. If a court rejects an application and this decision is upheld by the Citizenship Appeal Court or if an application is refused by the Minister, the applicant has the right to file a new application two years after the date of rejection.

Status of married women. The Canadian Citizenship Act places no disabilities on the married woman. She neither acquires nor does she lose Canadian citizenship by marriage. In order to acquire Canadian citizenship she must apply in exactly the same manner as does a man. The Canadian Citizenship Act enables a woman married to an alien whose nationality she acquired on marriage to divest herself of Canadian citizenship by the filing of a declaration of renunciation; it also provides for her to reacquire her Canadian citizenship on application. Finally, it provides a means whereby a woman, who had become an alien through marriage prior to January 1, 1947, may acquire the Canadian status she would otherwise have assumed on that date.

Status of minor children. Alien and British subject minor children do not automatically become Canadians with their parents. After one parent has become a Canadian, the responsible parent of that child — his mother if she has de facto custody of the child, or maintains him — the tutor or the legal guardian of the child may apply for citizenship on the child's behalf. Application is made to the Registrar of Canadian Citizenship, Ottawa. Provision is also made in the Citizenship Act to grant a certificate of citizenship to a minor child in special circumstances.

Loss of Canadian citizenship. Certain circumstances result in loss of citizenship. A Canadian loses his citizenship if when outside Canada and not under disability he acquires by a voluntary and formal act other than marriage the nationality or citizenship of a country other than Canada. This does not apply if the country is at war with Canada at the time of acquisition but in such a case the Minister may order that he cease to be a Canadian citizen. The purpose of this is to hold the person, if deemed necessary, to his obligations as a Canadian. A natural-born Canadian citizen who is a dual national by birth or through naturalization, and any Canadian citizen on marriage, may after attaining the age of 21 cease to be a Canadian citizen by making a declaration of renunciation thereof. A Canadian citizen who under the law of another country is a national or citizen of such country and who serves in the armed forces of such country when it is at war with Canada loses his Canadian citizenship. This does not apply if the Canadian citizen became a national or citizen of such country when it was at war with Canada.

Prior to the 1967 amendments of the Citizenship Act, a person, other than a natural-born Canadian, who since becoming a Canadian had resided outside Canada for 10 consecutive years automatically ceased to be a Canadian; this provision for automatic loss has been removed from the Citizenship Act. In addition, before the 1967 amendments loss of Canadian citizenship by revocation was limited under certain provisions of the Act only to non-natural-born Canadians. This discriminatory distinction between non-natural-born and natural-born Canadians has been removed from the Citizenship Act and the following substituted: Canadian citizenship may be revoked by the Governor in Council if, on a report from the Minister, he is satisfied that any Canadian citizen has, when not under a disability, acquired voluntarily, when in Canada, the citizenship of a foreign country (other than by marriage); taken or made an oath, affirmation or other declaration of allegiance to a foreign country; made a declaration renouncing his Canadian citizenship; or obtained Canadian citizenship by false representation

or fraud or by concealment of material circumstances. Where in the opinion of the Minister a doubt exists as to whether a person has ceased to be a Canadian citizen, the Minister may refer the question to the commission referred to in the Citizenship Act for a ruling and the decision of the commission or the court, as the case may be, shall be final.

Citizenship statistics. Citizenship certificates are "issued" for various reasons to persons who are already Canadian citizens; certificates are "granted" to those who become Canadian citizens by the grant of such certificates. In 1972, 107,178 certificates were issued and 80,866 granted; 30,141 of those granted went to British subjects, 59,725 to aliens. In 1973, 133,370 certificates were issued and 104,697 were granted. Of the latter, 40,424 went to British subjects and 64,273 to aliens.

The decennial census of Canada requires that each person state the country to which he owed allegiance and had citizenship rights as of June 1 of the census year. According to the 1971 Census, only 6% of the Canadian population on June 1, 1971 reported a country of citizenship other than Canada.

3.2.5 Native peoples

3.2.5.1 Indians

The federal Department of Indian Affairs and Northern Development is responsible for the 270,494 Indians registered with the Department under the Indian Act. The role of the federal government in administering Indian affairs is changing as the native people become involved in managing their own affairs, as Indian representatives and government confer before major policy decisions are taken, and as band councils plan activities and distribute funds available under the Indian Affairs program.

Community improvement. The Department's Community Affairs Branch assists with the physical development of Indian communities, which involves planning, housing, water, sanitation, electricity and the construction and maintenance of roads on reserves. Indian participation in these activities as well as in services such as school maintenance, fire and police protection and local government is increasing as the concept of band management is extended.

The federal government administers three housing programs on reserves: subsidy housing, a program of direct subsidy; band-administered housing, a scheme in which band councils are authorized to administer federal appropriations either as the sole source of financing or in conjunction with band funds and Central Mortgage and Housing Corporation (CMHC) loans; and Indian on-reserve housing, a system of CMHC loans to individuals guaranteed by the Minister and often applied in conjunction with band funds or federal subsidies. Indians employed away from the reserve, wishing to live in non-Indian communities, are eligible for loans from CMHC or approved lenders in conjunction with a program of forgivable mortgage loans from the federal government.

Community development. Under agreements with the federal government, provincial Indian associations receive funds to administer community development programs that are jointly planned with government officials, but administered by the associations themselves. These programs are intended to help Indian people to participate in improving the social, economic and cultural conditions of life in their communities.

Since the first such agreement was concluded with the Manitoba Indian Brotherhood in 1969 others have been entered into with Indian associations in Saskatchewan, Nova Scotia, New Brunswick, British Columbia, the Yukon Territory, the Northwest Territories and Ontario. In 1973-74 these associations handled nearly \$2 million in community development funds.

Economic development. The Department, through its Indian-Eskimo Economic Development Branch, works to raise the economic status and increase the independence of individuals and bands by assisting in the creation of business and employment opportunities in service and secondary industries and in areas of resource utilization and land development, including the development of mineral resources on Indian reserves. Many of these programs are conducted in co-operation with other federal government departments, provincial governments and private organizations. Assistance is in the form of loans, grants and contributions, loan guarantees, technical and management advice, and specialized training. The loans and guarantees are provided from the Indian Economic Development Fund, capitalized at \$35 million for the four

years ended March 31, 1974. In addition, the Branch has appropriated a total of \$13 million during the past four years in grants and contributions to be used to encourage economic activity through the provision of basic infrastructure and professional and technical services. For the fiscal year 1973-74 the fund provided \$12 million in loans, guarantees, grants and contributions. The Branch also administers the Indian reserves and surrendered lands as well as certain categories of Indian estates.

Social services. Indians are eligible for benefits from a number of welfare programs which are administered by different levels of government, Indian bands and private agencies. Like other Canadians, not all Indians have the same programs available to them, as some programs vary not only between but also within provinces and on and off reserves.

Some Indian bands administer social assistance and child care for persons living on the reserve of the band. The criteria of eligibility and rates of payment for social assistance are based on those of the province in which the band is located. Family allowances, old age security and the guaranteed income supplement are paid to Indians by the Department of National Health and Welfare on the same basis as they are paid to other Canadians.

Indians are eligible for benefits from some, but not all, provincial welfare programs except in the Northwest Territories, where they are eligible for benefits from all territorial welfare programs. Generally speaking, Indians are eligible for benefits under provincial programs for specific categories or persons, such as the blind. Benefits from less specific programs, such as social assistance, are not generally available to Indians living on reserves, although they are in some parts of some provinces.

The federal Department of Indian Affairs and Northern Development provides social assistance, care for children and care for physically handicapped adults for Indians when these are not available from other sources. The criteria of eligibility and the rates used in calculating the amount to which an applicant for social assistance is entitled are based on those of the province in which the person applies for assistance.

Indian consultation and negotiation. In recent years the Department of Indian Affairs and Northern Development has provided consultation funds to finance meetings between departmental officials and Indian associations representing bands, as well as all-chiefs conferences. An increasing number of bands have indicated that they wish to carry out consultations on their own to resolve matters of immediate concern. At the Regional Directors Conference in February 1972 it was agreed that more emphasis should be placed on meetings between regional staff and bands, and less on conferences with associations and between associations and bands.

Financing from the Department of the Secretary of State provides for administrative and functional operations of Indian associations and supports at least one all-chiefs meeting per province each year.

Policy planning and research. A Branch was established in 1972 to co-ordinate the policy planning and research functions in the Indian-Eskimo programs. Incorporated within the Branch is a unit which deals with Indian claims based on traditional use and occupancy of land and on past administrative actions which might have been contrary to treaties and rights of native people. The Branch administers a program to fund Indian research on treaties and rights. The policy planning group co-ordinates policy development and undertakes long-range planning, while the research section ensures that research projects undertaken by branches are of use to other elements of the program.

3.2.5.2 Inuit

Canada's 18,000 Inuit or Eskimo people, mostly resident in the Northwest Territories, Arctic Quebec and northern Labrador, are the concern of the federal Department of Indian Affairs and Northern Development, the government of the Northwest Territories and provincial governments.

In the past two decades various programs have contributed to drastic changes in the Inuit way of life. Federal schools have been built in every Inuit community, extending to grade six in most places and grade eight in others. Students attend residential pre-vocational or secondary schools in Inuvik, Yellowknife, Fort Simpson or Fort Smith in the Northwest Territories, Churchill, Manitoba, or in southern Canada.

Many communities have become incorporated villages governed by elected councils. At

present there are three Eskimos on the elected Council of the Northwest Territories.

The Inuit Tapirisat of Canada (Eskimo Brotherhood) was founded in 1971 with financial assistance from the Department of the Secretary of State. In consultation with the Department of Indian Affairs and Northern Development the ITC has begun several programs, including a study of land claims, a land-use and occupancy study, a legal assistance program, a language commission to study the possibility of standardizing Inuit orthography, sponsorship of a cultural and educational centre and production of a layman's information guide to Canadian law entitled *Inuit and the law*.

With the search for oil, gas and minerals in the Arctic, many Inuit are finding employment in petroleum and related industries. However, many still live by their traditional skills of hunting, trapping and fishing. One of the most successful enterprises is the production and sale of Inuit artwork — stone, bone and ivory sculpture, and graphics. The industry is expanding and co-operatives run by the Inuit ensure a good return to the artist.

Communications, long a problem in the Arctic, have recently entered a new era with the introduction of ANIK, a communications satellite through which telephone, radio and television transmissions are beamed to a number of northern communities. The motorized toboggan has replaced the traditional dog sled, and for longer journeys the airplane is used. Few communities are without airstrips. STOL* (short take-off and landing) and jet aircraft have also made the huge spaces of the North more accessible.

3.2.6 Departments, boards, commissions and corporations

In Canada the work of government is conducted by federal departments, special boards, commissions and Crown corporations. During the past quarter-century this last type of organization, the Crown corporation, has been used frequently for administering and managing many public services in which business enterprise and public accountability must be combined. The historical evolution of Crown corporations is described in the *1972 Canada Year Book* p 153. Part VIII of the Financial Administration Act (RSC 1970, c.F-10) provides a uniform system of financial and budgetary control and of accounting, auditing and reporting for Crown corporations. In addition, that legislation defines a Crown corporation as a corporation that is ultimately accountable, through a Minister, to Parliament for the conduct of its affairs and establishes three classes of corporation — departmental, agency and proprietary.

Departmental corporations. A departmental corporation is defined as a Crown corporation that is a servant or agent of Her Majesty in right of Canada and is responsible for administrative, supervisory or regulatory services of a governmental nature. The following corporations are classified as departmental corporations in Schedule B to the Financial Administration Act:

- Agricultural Stabilization Board
- Atomic Energy Control Board
- Director of Soldier Settlement
- The Director, The Veterans' Land Act
- Economic Council of Canada
- Fisheries Prices Support Board
- Medical Research Council
- Municipal Development and Loan Board
- National Museums of Canada
- National Research Council
- Science Council of Canada
- Unemployment Insurance Commission.

Agency corporations. An agency corporation is defined as a Crown corporation that is an agent of Her Majesty in right of Canada and is responsible for the management of trading or service operations on a quasi-commercial basis or for the management of procurement, construction or disposal activities on behalf of Her Majesty in right of Canada. The following corporations are classified as agency corporations in Schedule C to the Financial Administration Act:

- Atomic Energy of Canada Limited
- Canadian Arsenals Limited
- Canadian Commercial Corporation
- Canadian Dairy Commission
- Canadian Film Development Corporation
- Canadian Livestock Feed Board
- Canadian National (West Indies) Steamships Limited

Canadian Patents and Development Limited
 Canadian Saltfish Corporation
 Company of Young Canadians
 Crown Assets Disposal Corporation
 Defence Construction (1951) Limited
 National Battlefields Commission
 National Capital Commission
 National Harbours Board
 Northern Canada Power Commission
 Royal Canadian Mint
 Uranium Canada Limited.

Proprietary corporations. A proprietary corporation is defined as a Crown corporation that is responsible for the management of lending or financial operations, or for the management of commercial or industrial operations involving the production of or dealing in goods and the supplying of services to the public, and is ordinarily required to conduct its operations without parliamentary appropriations. The following corporations are classified as proprietary corporations in Schedule D to the Act:

Air Canada
 Canada Deposit Insurance Corporation
 Canadian Broadcasting Corporation
 Canadian Overseas Telecommunication Corporation
 Cape Breton Development Corporation
 Central Mortgage and Housing Corporation
 Eldorado Aviation Limited
 Eldorado Nuclear Limited
 Export Development Corporation
 Farm Credit Corporation
 Freshwater Fish Marketing Corporation
 National Railways, as defined in the Canadian National—Canadian Pacific Act (RSC 1952, c.39)
 Northern Transportation Company Limited
 Pilotage Authorities:

Atlantic Pilotage Authority
 Great Lakes Pilotage Authority
 Laurentian Pilotage Authority
 Pacific Pilotage Authority

St. Lawrence Seaway Authority
 Seaway International Bridge Corporation Limited (formerly Cornwall International Bridge Company Limited).

Departmental corporations are governed by the provisions of the Financial Administration Act that are applicable to departments generally. Agency and proprietary corporations, however, are subject to the provisions of the Crown corporations part of the Act, although, if there is any inconsistency between its provisions and those of any other Act applicable to a corporation, the Act provides that the latter prevail. The same part provides for control and regulation of corporation budgets and bank accounts, turning over surplus money to the Receiver General, loans for limited working-capital purposes, awarding of contracts and establishment of reserves, keeping and auditing of accounts, and the preparation of financial statements and reports and their submission to Parliament through the appropriate Minister.

A further form of control is exercised by Parliament through the power to vote financial assistance to a corporation, which may secure financing through parliamentary grants, loans or advances, by the issue of capital stock to the government, or by the sale of bonds to either the government or the public. Several corporations finance all or a portion of their requirements from their own resources or earnings.

Before 1952 Crown corporations did not pay corporate income taxes. However, the Income Tax Act was amended, effective January 1, 1952, to require proprietary Crown corporations to pay taxes on income earned in the same manner as any privately owned corporation. As a result of this amendment it is now possible to make a more realistic comparison of the financial statements of these Crown companies with those of private industry, and thus assess the relative efficiency of their operations. Crown corporations also pay provincial retail sales taxes, gasoline or motor vehicle fuel taxes and motor vehicle fees subject to the terms of the Crown Corporations (Provincial Taxes and Fees) Act of 1964.

Unclassified corporations. The following Crown corporations, because of the special nature of their operations, are not classified in the Financial Administration Act but are governed by their own Acts of incorporation: the Bank of Canada; the Canada Council; the Canadian National Railways Securities Trust; the Canadian Wheat Board; the Industrial Development Bank; and the National Arts Centre Corporation. The only provision of the Financial Administration Act to which they are subject is that governing the appointment of auditors.

Other corporations. The government has participated in the establishment of some corporations that are not subject to the provisions of the Financial Administration Act and do not report to Parliament. The Canada Development Corporation, Telesat Canada and Panarctic Oils Ltd. are corporations of this type.

An alphabetical list of federal Ministers and the departments and other agencies for which they report to Parliament follows. Brief descriptions of the functions of many of these government organizations and related agencies will be found in Appendix 1. The accompanying organization chart illustrates the federal structure to the departmental level. A more detailed chart is available from Information Canada.

Minister of Agriculture

Department of Agriculture
Agricultural Products Board
Agricultural Stabilization Board
Canadian Dairy Commission
Canadian Grain Commission
Canadian Livestock Feed Board
Crop Insurance Administration
Farm Credit Corporation
National Farm Products Marketing Council
Prairie Farm Assistance Administration

Minister of Communications

Department of Communications
Canadian Overseas Telecommunication Corporation
Canadian Radio-Television Commission
Canadian Transport Commission

Minister of Consumer and Corporate Affairs

Department of Consumer and Corporate Affairs
Canadian Consumer Council
Copyright Appeal Board
Food Prices Review Board
Restrictive Trade Practices Commission

Minister of Energy, Mines and Resources

Department of Energy, Mines and Resources
Atomic Energy of Canada Limited
Atomic Energy Control Board
Board of Examiners for Dominion Land Surveyors
Canadian Permanent Committee on Geographical Names
Columbia River Treaty Permanent Engineering Board
Eldorado Aviation Limited
Eldorado Nuclear Limited
Energy Supplies Allocation Board
Interprovincial Boundary Commission
National Energy Board
Uranium Canada Limited

Minister of the Environment

Department of the Environment

Minister of State (Fisheries)

Canadian Saltfish Corporation
Fisheries Prices Support Board
Fisheries Research Board of Canada
Freshwater Fish Marketing Board
International Fisheries Commission

Secretary of State for External Affairs

Department of External Affairs
Canadian International Development Agency
Foreign Claims Commission
International Boundary Commission
International Development Research Centre
International Joint Commission
Roosevelt Campobello International Park Commission

Minister of Finance

Department of Finance
Anti-dumping Tribunal
Bank of Canada
Canada Deposit Insurance Corporation
Department of Insurance
Industrial Development Bank
Tariff Board

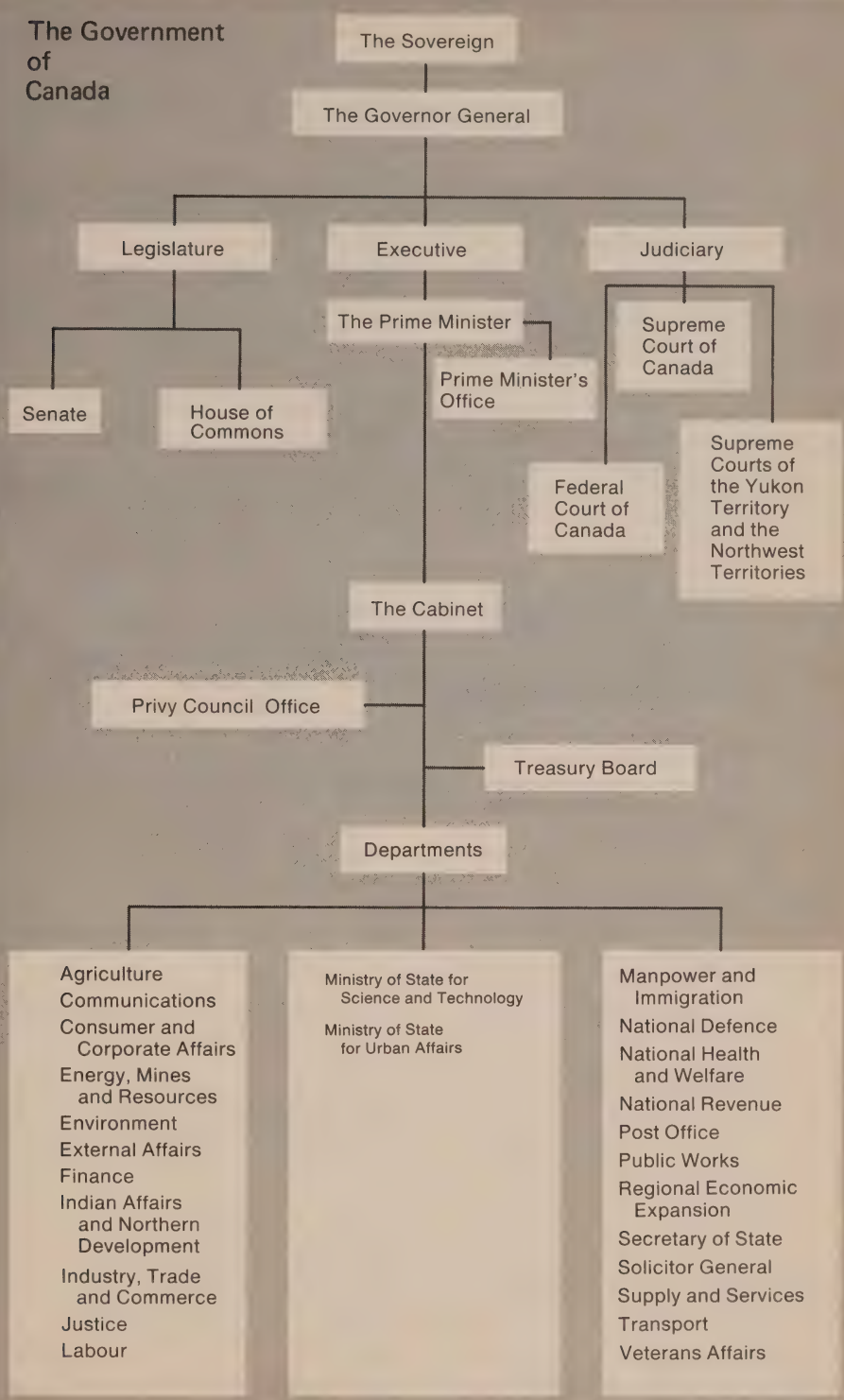
Minister of Indian Affairs and Northern Development

Department of Indian Affairs and Northern Development
Council of the Northwest Territories
Council of the Yukon Territory
Historic Sites and Monuments Board of Canada
National Battlefields Commission
Northern Canada Power Commission

Minister of Industry, Trade and Commerce

Department of Industry, Trade and Commerce
Export Development Corporation
General Adjustment Assistance Board
Machinery and Equipment Advisory Board
Metric Commission
National Design Council
Standards Council of Canada
Statistics Canada
Textile and Clothing Board

The Government of Canada



Minister of Justice and Attorney General of Canada

Department of Justice
 Canadian Wheat Board
 Law Reform Commission
 Tax Review Board

Minister of Labour

Department of Labour
 Canada Labour Relations Board
 Information Canada
 Merchant Seamen Compensation Board

Minister of Manpower and Immigration

Department of Manpower and Immigration
 Canada Manpower and Immigration Council
 Immigration Appeal Board
 Unemployment Insurance Commission

Minister of National Defence

Department of National Defence
 Canada Emergency Measures Organization
 Defence Construction (1951) Limited
 Defence Research Board

Minister of National Health and Welfare

Department of National Health and Welfare
 Dominion Council of Health
 Medical Research Council
 National Advisory Council on Fitness and Amateur Sport
 National Council of Welfare
 Pension Appeals Board

Minister of National Revenue

Department of National Revenue

Postmaster General

Post Office Department

Minister of Public Works

Department of Public Works
 Dominion Fire Commissioner

Minister of Regional Economic Expansion

Department of Regional Economic Expansion
 Atlantic Development Council
 Canadian Council on Rural Development
 Cape Breton Development Corporation
 New Brunswick Multiplex Corporation
 Prairie Farm Rehabilitation Administration

Minister of State for Science and Technology

Ministry of State for Science and Technology
 Science Council of Canada

Secretary of State of Canada

Department of the Secretary of State
 Bilingual Districts Advisory Board

Canada Council

Canadian Broadcasting Corporation
 Canadian Film Development Corporation
 Company of Young Canadians
 National Arts Centre Corporation
 National Film Board
 National Library
 National Museums of Canada
 Public Archives

Solicitor General

Department of the Solicitor General
 Canadian Penitentiary Service
 National Parole Board
 Royal Canadian Mounted Police

Minister of Supply and Services

Department of Supply and Services
 Canadian Arsenal Limited
 Canadian Commercial Corporation
 Canadian Government Specifications Board
 Crown Assets Disposal Corporation
 Royal Canadian Mint

Minister of Transport

Ministry of Transport
 Air Canada
 Canadian National Railways
 Canadian Transport Commission
 National Harbours Board
 Northern Transportation Company Limited
 Pilotage Authorities
 Atlantic Pilotage Authority
 Great Lakes Pilotage Authority
 Laurentian Pilotage Authority
 Pacific Pilotage Authority
 St. Lawrence Seaway Authority
 Seaway International Bridge Corporation Limited

President of Treasury Board

Canadian Patents and Development Limited
 National Research Council

Minister of State for Urban Affairs

Ministry of State for Urban Affairs
 Central Mortgage and Housing Corporation
 National Capital Commission

Minister of Veterans Affairs

Department of Veterans Affairs
 Army Benevolent Fund Board
 Bureau of Pensions Advocates
 Canadian Pension Commission
 Commonwealth War Graves Commission
 (Canada)
 Pension Review Board
 War Veterans Allowance Board

3.3 Provincial and territorial governments

3.3.1 Provincial governments

In each of the provinces, the Queen is represented by a Lieutenant Governor appointed by the Governor General in Council. The Lieutenant Governor acts on the advice and with the assistance of his Ministry or Executive Council which is responsible to the legislature and resigns office under circumstances similar to those described concerning the federal government.

The legislature of each province is unicameral, consisting of the Lieutenant Governor and a Legislative Assembly. The Legislative Assembly is elected by the people for a statutory term of five years but may be dissolved within that period by the Lieutenant Governor on the advice of the Premier of the province.

Sections 92, 93 and 95 of the British North America Act, 1867 (Br. Stat. 1867, c.3 and amendments) assign legislative authority in certain areas to the provincial governments (see Chapter 2).

Details regarding qualifications and disqualifications of the franchise are contained in the Elections Act of each province. In general, every person at a specified age (18 to 21 years) who is a Canadian citizen or (in certain provinces) other British subject, who complies with certain residence requirements in the province and the electoral district of polling and who falls under no statutory disqualifications, is entitled to vote. Voting privileges are given to persons in Prince Edward Island, New Brunswick, Quebec, Ontario, Manitoba, Saskatchewan and Alberta at the age of 18 and in Newfoundland, Nova Scotia and British Columbia at 19 years.

3.3.1.1 Newfoundland

The government of Newfoundland has a Lieutenant Governor, an Executive Council and a House of Assembly made up of 42 members elected for a term not to exceed five years. Since April 2, 1969 the Lieutenant Governor has been the Honourable E. John A. Harnum. The Legislature, elected March 24, 1972, is the 36th in the history of Newfoundland and the eighth since Confederation. After a by-election in November 1973, 32 Progressive Conservatives, nine Liberals and one member of the New Labrador Party held seats in the House.

The Premier receives a salary of \$19,000 and Cabinet Ministers \$12,000 per annum, plus a car allowance of \$2,000, sessional indemnity of \$8,000 and a travelling expense allowance of \$4,000. Each member of the House of Assembly receives a sessional indemnity of \$8,000 plus a travelling and expense allowance of \$4,000. The Leader of the Opposition receives an additional allowance of \$12,000.

The Executive Council of Newfoundland as at December 31, 1973

Premier, Hon. F.D. Moores	Minister of Manpower and Industrial Relations and
President of the Council, Hon. Dr. T.C. Farrell	Minister of Public Works and Services, Hon. J.G.
Minister of Justice, Hon. T. Alex Hickman	Rousseau, Jr.
Minister of Finance and President of the Treasury	Minister of Provincial Affairs and Environment,
Board, Hon. J.C. Crosbie	Hon. G. Dawe
Minister of Education, Hon. G. Ottenheimer	Minister of Fisheries, Hon. H. Collins
Minister of Transportation and Communications,	Minister of Tourism and Minister of Rehabilitation
Hon. T.V. Hickey	and Recreation, Hon. T. Doyle
Minister of Social Services, Hon. A.J. Murphy	Minister of Mines and Energy, Hon. Leo Barry
Minister of Health, Hon. Dr. A.T. Rowe	Minister of Rural Development, Hon. J. Reid
Minister of Industrial Development, Hon. C.W.	Minister of Forestry and Agriculture, Hon. E.
Doody	Maynard
Minister of Municipal Affairs and Housing, Hon.	Minister without portfolio, Hon. William Marshall.
H.R.V. Earle	

3.3.1.2 Prince Edward Island

The government of Prince Edward Island consists of a Lieutenant Governor, an Executive Council and a Legislative Assembly. The present Lieutenant Governor is the Honourable J. George MacKay, appointed effective October 6, 1969. The Legislative Assembly has 32 members from 16 electoral districts who may serve for a statutory term not exceeding five years. Each district elects two representatives to the Legislature. The 52nd Assembly elected May 11, 1970 consisted of 27 Liberals and five Progressive Conservatives; as at December 31, 1972 party standings had changed to 25 Liberals and seven Progressive Conservatives.

A member of the Assembly receives \$4,000 for each regular session attended by him and an additional \$2,000 tax-free for travelling and other expenses incurred in attending a session and representing his district. In addition the Premier receives a salary of \$10,000, a Cabinet Minister \$6,000 and a Minister without portfolio \$3,600. The Speaker of the Assembly is paid an additional indemnity of \$1,000 and his tax-free allowance is increased by \$500 for each session; higher sessional indemnities and allowances are also available to the Deputy Speaker in the amounts of \$600 and \$300, respectively, and to the Leader of the Opposition in the amounts of \$2,000 and \$1,000. All indemnities and allowances accrue from the date of election to the legislature and are paid monthly. No sessional indemnity or expenses are paid for any special session of the Legislature.

The Executive Council of Prince Edward Island as at December 31, 1973

Premier and Minister of Agriculture and Forestry,
Hon. Alexander B. Campbell
President of the Executive Council, Minister of
Justice, Attorney and Advocate General and
Provincial Secretary, Hon. Gordon L. Bennett
Minister of Public Works and Highways, Hon.
George J. Ferguson
Minister of Finance, Hon. T. Earle Hickey
Minister of Industry and Commerce and Minister
of Development, Hon. John H. Maloney

Minister of Health, Minister of Social Services and
Minister of Labour, Hon. Bruce L. Stewart
Minister of the Environment and Tourism and
Minister of Community Services, Hon. William
Gallant
Minister of Fisheries, Hon. Robert E. Campbell
Minister of Education, Hon. Bennett Campbell
Minister without portfolio and Minister responsible
for the PEI Housing Authority, Hon. Jean Can-
field.

3.3.1.3 Nova Scotia

The government of Nova Scotia consists of a Lieutenant Governor, an Executive Council and a House of Assembly. Since October 1, 1973 the Honourable Clarence L. Gosse has been Lieutenant Governor. The Legislature has 46 members elected for a maximum term of five years. On October 13, 1970, 23 Liberals, 21 Progressive Conservatives and two New Democrats were elected to the province's 50th Legislature and 27th since Confederation.

The Premier of the province receives a salary of \$18,500 per annum and each Cabinet Minister a salary of \$16,500 per annum. Each member of the House of Assembly is paid a sessional indemnity of \$5,000 and an allowance of \$2,500 for expenses incidental to the discharge of his duties. The Leader of the Opposition receives an allowance of \$16,500 in addition to his sessional indemnity.

The Executive Council of Nova Scotia as at December 31, 1973

Premier and Chairman of the Nova Scotia Power
Corporation, Hon. Gerald A. Regan
Minister of Finance and Chairman of the Treasury
Board, Hon. Peter M. Nicholson
Provincial Secretary, Minister of Recreation and
Minister in charge of administration of the Resi-
dential Tenancies Act, Hon. A. Garnet Brown
Minister of Highways and Minister of Mines, Hon.
Leonard L. Pace
Minister of Public Works, Hon. Benoit Comeau
Minister of Education, Hon. J. William Gillis
Attorney General, Minister in charge of adminis-
tration of the Civil Service Act and the Civil Ser-
vice Joint Council Act and Minister in charge of
administration of the Human Rights Act, Hon.
Allan E. Sullivan
Minister of Public Health, Minister of Labour and
Minister in charge of administration of the Hous-

ing Development Act, Hon. D. Scott MacNutt
Minister of Municipal Affairs and Minister in
charge of administration of the Liquor Control
Act, Hon. J. Fraser Mooney
Minister of the Environment, Minister of Tourism
and Minister in charge of administration of the
Emergency Measures Organization (NS) Act and
Regulations, Hon. Glen M. Bagnell
Minister of Lands and Forests, Hon. Maurice E.
DeLory
Minister of Agriculture and Marketing, Hon. John
Hawkins
Minister of Development, Hon. George M.
Mitchell
Minister of Social Services, Hon. Harold M.
Huskilson
Minister of Fisheries, Hon. Alexander M.
Cameron.

3.3.1.4 New Brunswick

The government of New Brunswick has a Lieutenant Governor, an Executive Council and a Legislative Assembly. The Honourable H.J. Robichaud, sworn in October 8, 1971, is the present Lieutenant Governor. The Legislature elected October 26, 1970 is the 47th in New Brunswick's history and the 20th since Confederation. It has 58 members, at present 32

Progressive Conservatives and 25 Liberals, elected for a statutory term not to exceed five years. One seat is vacant.

The Premier receives \$25,000 per annum in addition to the salary for any other portfolio he may hold. Each Cabinet Minister is paid \$16,000; each member of the Legislative Assembly receives \$8,000 and a \$2,500 allowance for expenses. The Leader of the Opposition receives an additional \$16,000. The Speaker and Deputy Speaker are paid \$5,000 and \$2,500, respectively, in addition to the regular indemnity.

The Executive Council of New Brunswick as at December 31, 1973

Premier, Hon. Richard Hatfield	Minister of Social Services and Minister of Youth, Hon. Brenda M. Robertson
Minister of Justice, Hon. John B.M. Baxter	Minister of Labour, Hon. Rodman E. Logan
Minister of Finance, Hon. Jean-Maurice Simard	Minister of Education, Hon. J. Lorne McGuigan
Chairman of Treasury Board and Minister of Tourism, Hon. Jean-Paul LeBlanc	Minister of Municipal Affairs, Hon. Horace B. Smith
Provincial Secretary, Hon. Omer Léger	Minister of Economic Growth, Hon. Paul S. Creaghan
Minister of Supply and Services, Hon. Carl Mooers	Minister of Fisheries and Environment, Hon. G.W.N. Cockburn
Minister of Highways, Hon. Wilfred Bishop	Minister of New Brunswick Electric Power Commission, Hon. J. Stewart Brooks.
Minister of Natural Resources, Hon. A. Edison Stairs	
Minister of Agriculture and Rural Development, Hon. George Horton	
Minister of Health, Hon. Lawrence Garvie	

3.3.1.5 Quebec

The government of Quebec consists of a Lieutenant Governor, an Executive Council and a National Assembly. The current Lieutenant Governor is the Honourable Hugues Lapointe, commissioned to office February 22, 1966. The National Assembly has 110 members elected for a maximum period of five years. Party standings in the 30th Legislature elected October 1973 were: Liberal 102; Social Credit 2; and Parti Québécois 6.

Each member of the National Assembly receives a sessional indemnity of \$15,600 and an expense allowance of \$7,140. In addition to this indemnity and allowance, the Prime Minister is paid \$20,800 annually and members of the Cabinet \$15,600. Each also receives a \$3,000 representation allowance. Ministers without portfolio receive an annual indemnity of \$15,600 with a representation allowance of \$3,000. The Chief Whips and parliamentary assistants are paid an annual indemnity of \$3,800 and a representation allowance of \$1,700. The Speaker of the National Assembly receives an indemnity of \$14,500, and a representation allowance of \$3,000; the Deputy Speaker receives an indemnity of \$6,500 and a representation allowance of \$2,000. The Leader of the Opposition is paid an indemnity of \$16,200, and a representation allowance of \$3,000. Legislation passed on July 7, 1971 provides for payment of a \$6,000 indemnity and a \$2,000 supplementary allowance to the leader in the National Assembly of any opposition party having elected at least 12 members or having obtained 20% of the total vote in Quebec at the last general election.

A member is entitled to a maximum of \$200 a month for expenses incurred in maintaining an office in his constituency if the government does not provide one. Members are entitled to reimbursement of expenses incurred in maintaining in Quebec or its immediate vicinity a second residence which they would not require had they not been elected to the Assembly, or for trips to Quebec, in an amount not exceeding \$200 a month.

Members of the Executive Council as at December 31, 1973

Prime Minister, Robert Bourassa	Minister of Financial Institutions, Companies and Co-operatives, William Tetley
Deputy Prime Minister and Minister of Intergovernmental Affairs, Gérard D. Lévesque	Minister of Agriculture, Normand Toupin
Minister of Transport, Raymond Mailloux	Minister of Natural Resources, Gilles Massé
Minister of Cultural Affairs, Denis Hardy	Minister of Lands and Forests, Kevin Drummond
Minister of Social Affairs, Claude E. Forget	Minister of Education, François Cloutier
Minister of Justice, Jérôme Choquette	Minister responsible for the High Commission on Youth, Recreation and Sport, Paul Phaneuf
Minister of Industry and Commerce, Guy St-Pierre	Minister of Communications, Jean-Paul L'Allier
Minister of Finance, Raymond Garneau	Minister of Revenue, Gérald Harvey
Minister of Municipal Affairs and Minister of the Environment, Victor C. Goldbloom	

Ministry of Quebec (concluded)

Minister of Labour and Manpower, Jean Cournoyer
 Minister of Immigration, Jean Bienvenue
 Minister of Tourism, Fish and Game, Claude Simard
 Minister of State for Intergovernmental Affairs and Minister of State for Finance, Oswald Parent
 Minister of State responsible for the Eastern Quebec Development Bureau, Robert Quenneville

Minister of State for Municipal Affairs and Environment, Georges Vaillancourt
 Minister of State for Social Affairs, Lise Bacon
 Minister of State for Transport, Paul Berthiaume
 Minister of State for Quebec Planning and Development Bureau, Bernard Lachapelle
 Minister of State to the Executive Council, Fernand Lalonde.

3.3.1.6 Ontario

The government of Ontario consists of a Lieutenant Governor, an Executive Council and a Legislative Assembly. In April 1974 the Honourable P. McGibbon took office as Lieutenant Governor. The Legislative Assembly is composed of 117 members elected for a statutory term not to exceed five years. At the general election October 21, 1971, 78 Progressive Conservatives, 20 Liberals and 19 New Democrats were elected to the province's 29th Legislature.

In addition to the regular ministries there are the following provincial agencies: the Niagara Parks Commission, the Ontario Municipal Board, Ontario Hydro, the St. Lawrence Development Commission, the Ontario Northland Transportation Commission, the Liquor Control Board and the Liquor Licence Board.

Under the provisions of the Legislative Assembly Act (RSO 1970, c.240 as amended) each member of the Assembly is paid an annual indemnity of \$15,000 and an expense allowance of \$7,500. In addition, the Speaker receives a special annual indemnity of \$9,000, the Chairman of the Committee of the Whole \$5,000 and the Leader of the Opposition a salary of \$18,000. Each member of the Cabinet having charge of a ministry receives the ordinary indemnity as a member of the Legislature in addition to his salary as a Minister of the Crown. The salary provided in the Executive Council Act for the Premier is \$25,000 and for a Cabinet Minister having charge of a ministry \$18,000. The Leader of the Opposition receives a representation allowance of \$3,000 per annum. Each Minister without portfolio receives an annual salary of \$7,500.

The Executive Council of Ontario as at December 31, 1973

Premier and President of the Council, Hon. William G. Davis
 Minister of Housing, Hon. Robert Welch
 Provincial Secretary for Resource Development, Hon. A.B.R. Lawrence
 Solicitor General, Hon. John Yaremko
 Minister of Revenue, Hon. Allan Grossman
 Minister of Agriculture and Food, Hon. William A. Stewart
 Minister of the Environment, Hon. James A.C. Auld
 Minister of Community and Social Services, Hon. René Brunelle
 Attorney General, Hon. Dalton A. Bales
 Minister of Education, Hon. Thomas L. Wells
 Minister of Labour, Hon. Fern Guindon
 Treasurer of Ontario, Minister of Economics and Intergovernmental Affairs, Hon. John White
 Provincial Secretary for Justice, Hon. George A. Kerr

Minister of Correctional Services, Hon. C.J.S. Apps
 Minister of Transportation and Communications, Hon. Gordon Carton
 Minister of Natural Resources, Hon. Leo Bernier
 Chairman of the Management Board of Cabinet, Hon. Eric A. Winkler
 Minister of Government Services, Hon. James W. Snow
 Minister of Health, Hon. Richard T. Potter
 Minister of Consumer and Commercial Relations, Hon. John T. Clement
 Minister of Colleges and Universities, Hon. Jack McNie
 Minister without Portfolio, Hon. Margaret Birch
 Minister of Industry and Tourism, Hon. Claude Bennett
 Minister of Energy, Hon. W. Darcy McKeough.

3.3.1.7 Manitoba

In addition to a Lieutenant Governor, Manitoba has an Executive Council composed of 15 members and a Legislative Assembly of 57 members elected for a maximum term of five years. The Honourable William John McKeag has been Lieutenant Governor since July 3, 1970. As a result of the general election June 28, 1973, 31 New Democrats, 21 Progressive Conservatives and five Liberals were elected to the 30th Legislature.

The Premier of the province is paid a salary of \$16,600 a year and each of the other members of the Cabinet \$15,600. Members of the Legislature are each paid a sessional indemnity of \$7,200 and a tax-free expense allowance of \$2,400. Each member attending the session and representing a constituency that is not wholly within the Winnipeg metropolitan area receives an additional allowance of \$600 for expenses incidental to the discharge of his duties as member. The Leader of the Opposition is paid \$15,600. The Speaker of the Legislative Assembly receives an additional indemnity of \$5,000 and expenses not exceeding \$1,000 in aggregate. The Deputy Speaker receives an additional indemnity of \$2,500 and expenses not exceeding \$500 in aggregate. Members required to live away from home receive a per diem allowance of \$15 from the opening of the session to prorogation excepting days during an adjournment of the Assembly for a period of four or more continuous days.

The Executive Council of Manitoba as at December 31, 1973

Premier, President of the Council, Minister for Urban Affairs, Minister of Dominion-Provincial Relations, Minister responsible for Manitoba Hydro, Hon. Edward Schreyer
Minister of Finance, Hon. Saul M. Cherniack
Minister of Labour, Minister responsible for the Civil Service Act, the Civil Service Superannuation Act and the Public Servants Insurance Act, Hon. Russell Paulley
Minister of Mines, Resources and Environmental Management and Minister responsible for the administration of the Development Corporation Act, Hon. Sidney Green
Minister of Agriculture and Minister of Co-operative Development, Hon. Samuel Uskiw
Minister of Health and Social Development and Minister responsible for the Manitoba Housing and Renewal Corporation, Hon. Saul A. Miller
Minister of Tourism, Recreation and Cultural

Affairs and Minister responsible for Health, Education and Social Policy, Hon. René Toupin
Minister of Industry and Commerce, Hon. Leonard Evans
Minister of Highways, Hon. Peter Burtiniak
Attorney General and Minister of Municipal Affairs, Hon. Howard R. Pawley
Minister of Education and Minister of Colleges and Universities Affairs, Hon. Ben Hanuschak
Minister of Public Works, Hon. Russell Doern
Minister of Northern Affairs, Hon. Ronald McBryde
Minister of Consumer, Corporate and Internal Services and Minister responsible for Manitoba Telephone System, Hon. Ian Turnbull
Minister responsible for Manitoba Public Insurance Corporation and Minister responsible for Motor Vehicle Branch, Hon. Billie Uruski.

3.3.1.8 Saskatchewan

The government of Saskatchewan consists of a Lieutenant Governor, an Executive Council and a Legislative Assembly. Since February 3, 1970 the Honourable Stephen Worobetz has been Lieutenant Governor. The statutory number of members of the Legislative Assembly is 60, elected for a maximum term of five years. At the general election June 23, 1971, 45 New Democrats and 15 Liberals were elected to form Saskatchewan's 17th Legislature, which opened July 28, 1971 and is still in session.

The Premier receives \$20,000 and each Cabinet Minister \$15,000 annually in addition to a sessional indemnity and allowance. The Leader of the Opposition receives \$15,000 plus an office allowance of \$24,000 per annum, the Speaker \$5,000 and the Deputy Speaker \$3,000.

Each member of the Legislature is paid a sessional indemnity of \$6,000, an expense allowance of \$4,000 and a sessional allowance of \$2,500. Each of the members for the three northernmost constituencies of Prince Albert East, Athabasca and Meadow Lake receives a \$6,500 sessional indemnity and a \$3,750 expense allowance. Government and Opposition Whips are paid an annual allowance of \$1,000 each and legislative secretaries an annual allowance of \$3,000 each.

The Executive Council of Saskatchewan as at December 31, 1973

Premier and President of the Council, Hon. A.E. Blakeney
Attorney General, Hon. R.J. Romanow
Minister of Agriculture, Hon. J.R. Messer
Minister of Public Health, Hon. W.E. Smishek
Minister of Municipal Affairs, Hon. E.I. Wood
Minister of Labour, Hon. G.T. Snyder
Minister of Northern Saskatchewan, Hon. G.R. Bowerman
Minister of the Environment, Hon. N.E. Byers

Minister of Education, Hon. G. MacMurchy
Minister of Highways and Transportation, Hon. E. Kramer
Minister of Government Services, Hon. J.E. Brockelbank
Minister of Industry and Commerce, Hon. K. Thorson
Minister of Social Services, Hon. A. Taylor
Minister of Mineral Resources, Hon. E. Cowley

Ministry of Saskatchewan (concluded)

Minister of Culture and Youth, Consumer Affairs
and Provincial Secretary, Hon. E. Tchorzewski
Minister of Finance, Hon. W.A. Robbins
Minister of Natural Resources, Hon. J.R.
Kowalchuk

Minister of Co-operation and Co-operative
Development, Hon. D.W. Cody.

3.3.1.9 Alberta

In addition to the Lieutenant Governor (since April 1974 the Honourable R. Steinhauer) the government of Alberta is composed of an Executive Council and a Legislative Assembly of 75 members elected for a maximum period of five years. On August 30, 1971, 49 Progressive Conservatives, 24 members of the Social Credit party, one New Democrat and one Independent were elected to form the 17th Legislature.

Each member of the Legislative Assembly receives a sessional indemnity of \$9,000, a \$4,500 expense allowance and \$30 for each day during the session when the member is necessarily absent from his ordinary place of residence. In addition to the indemnity and expense allowance, the Speaker receives a salary of \$8,000 and the Deputy Speaker \$5,000. The Leader of the Opposition's salary in addition to the indemnity and expense allowance is \$22,000. The Speaker, Deputy Speaker and Leader of the Opposition also receive \$30 for each day during the session when they are necessarily absent from their ordinary place of residence. In addition to the sessional indemnity and allowance the Premier receives \$27,000, other Ministers \$22,000 and Ministers without portfolio \$16,000.

The Executive Council of Alberta as at December 31, 1973

Premier and President of the Executive Council,
Hon. Peter Lougheed
Minister of Agriculture, Hon. Hugh M. Horner
Minister of Federal and Intergovernmental Affairs,
Hon. Donald R. Getty
Minister of Education, Hon. Louis D. Hyndman
Provincial Treasurer, Hon. Gordon T.W. Miniely
Attorney General and Provincial Secretary, Hon.
C. Mervin Leitch
Minister of Health and Social Development, Hon.
Neil S. Crawford
Minister of Manpower and Labour, Hon. Albert E.
Hohol
Minister of Environment, Hon. William J. Yurko
Minister of Municipal Affairs, Hon. David J.
Russell
Minister of Advanced Education, Hon. James L.
Foster
Minister of Mines and Minerals, Hon. William D.
Dickie

Minister of Telephones and Utilities, Hon. Roy A.
Farran
Minister of Public Works, Hon. Winston O. Backus
Minister of Industry and Commerce, Hon. Fred-
erick H. Peacock
Minister of Highways and Transport, Hon.
Clarence Copithorne
Minister of Lands and Forests, Hon. Allan A. War-
rack
Minister of Culture, Youth and Recreation, Hon.
Horst A. Schmid
Solicitor General, Hon. W. Helen Hunley
Minister of Consumer Affairs and Minister respon-
sible for Tourism, Hon. Robert W. Dowling
Minister without portfolio, responsible for Rural
Development, Hon. George Topolnisky
Minister without portfolio, responsible for North-
ern Development, Hon. J. Allen Adair.

3.3.1.10 British Columbia

The government of British Columbia consists of a Lieutenant Governor, an Executive Council and a Legislative Assembly. Since March 19, 1973 the Lieutenant Governor has been the Honourable Walter Stewart Owen. The Legislative Assembly has 55 members who are elected for a term not to exceed five years. Following the August 1972 election, the 30th Legislature opened October 17, 1972 with 38 New Democrats, 10 Social Credit members, five Liberals and two Progressive Conservatives in the Assembly.

Each member of the Executive Council and the Legislative Assembly receives a sessional allowance of \$8,000, \$1,500 for expenses, a living allowance of \$2,000 (based on a per diem rate of \$50, not exceeding 40 days), an allowance of 25 cents a mile of the distance, going and coming, according to the nearest mail route, and \$500 for telegraph and telephone expenses. In addition, the Premier is paid an annual salary of \$28,000, each member of the Executive Council with a portfolio \$24,000 and each member of the Executive Council without portfolio \$21,000. The Leader of the Opposition and the Speaker receive special allowances of \$11,000 for expenses; the Deputy Speaker receives a special allowance of \$4,500.

The Executive Council of British Columbia as at December 31, 1973

Premier, President of the Council, and Minister of Finance, Hon. David Barrett	Minister of Municipal Affairs, Hon. James Gibson Lorimer
Provincial Secretary and Minister of Travel Industry, Hon. Ernest Hall	Minister of Health, Hon. Dennis Geoffrey Cocke
Attorney General, Hon. Alexander Barrett MacDonald	Minister of Public Works, Hon. William Leonard Hartley
Minister of Lands, Forests and Water Resources, Hon. Robert Arthur Williams	Minister of Human Resources, Hon. Norman Levi
Minister of Agriculture, Hon. David Daniel Stupich	Minister of Highways, Hon. Graham Richard Lea
Minister of Mines and Petroleum Resources, Hon. Leo Thomas Nimsick	Minister of Industrial Development, Trade and Commerce, Hon. Gary Vernon Lauk
Minister of Transport and Communications, Hon. Robert Martin Strachan	Minister of Recreation and Conservation, Hon. Jack Radford
Minister of Labour, Hon. William Stewart King	Minister of Consumer Services, Hon. Phyllis Florence Young
Minister of Education, Hon. Eileen Elizabeth Dailly	Minister of Housing, Hon. Lorne Nicolson.

3.3.2 Territorial governments

3.3.2.1 Yukon Territory

The Yukon was established as a separate territory in 1898 to meet a need for local government created by the influx of miners during the gold rush. The Yukon Territory Act provided for a Commissioner and a Council of not more than six, all appointed by the Governor in Council. The Commissioner in Council was given legislative powers comparable to those held by the Lieutenant Governor and the Legislative Assembly of the Northwest Territories. By 1902, five elected councillors had been added and in 1908 a fully elected Council of 10 members was introduced. A population decline following the end of the gold rush was accelerated by enlistment during World War I and in 1919 the Council was reduced to three elected members. This remained the level of government until after World War II when population and economic activity again showed an increase, beginning with the building of the Alaska Highway. In 1960, the Council was increased to seven elected members and provision was made for the appointment of an Advisory Committee on Finance.

A principal feature of territorial government is its very close constitutional and working relationship with the Government of Canada. Although the provinces and the federal government each have jurisdiction and powers allocated by the British North America Act, the authority of the territorial government is allocated only by federal legislation. The Yukon Act prescribes the structure of the executive, legislative and judicial branches of the territorial government and the scope of their authority; all residual matters remain under federal control. The Yukon Territory has fully representative but not responsible government. Under authority of the Act, Whitehorse was designated as the seat of government in 1953.

The Government Organization Act, 1966, which describes the responsibilities of the Department of Indian Affairs and Northern Development for the development of northern Canada, is the other piece of basic legislation under which the territorial government operates. The Minister is responsible for the management of natural resources, except game, and for the development of the North generally. Although he shares authority with the Governor in Council for directing the Commissioner in his duties, he is the effective link between the territorial and federal governments.

The Executive. The executive side of the territorial government is headed by a Commissioner appointed by the federal government. He is directed to administer the government of the Yukon Territory under instruction from the Governor in Council or the Minister of Indian Affairs and Northern Development. In practice, the Commissioner is much more responsive to the wishes of his elected Council than the Yukon Act implies and he cannot spend any territorial funds which have not been voted by Council. A growing body of territorial ordinances require Council approval for specific actions; in practice, the Commissioner never acts on any major issue without consulting Council.

Because the Commissioner does not sit with Council, the Yukon Act was amended in 1960 to bridge the gap between the executive and legislative functions of government at Council sessions. The amendment provided for the formation of an Advisory Committee on Finance composed of three members of Council appointed by the Commissioner on the advice

of Council. Another step to harmonize the executive and legislative functions of government was the formation in November 1970 of an Executive Committee consisting of the Commissioner as chairman and four members: the Assistant Commissioner (Executive) and Administrator of the Yukon Territory as vice-chairman, the Assistant Commissioner (Administrative) and two members of Council to be appointed by the Commissioner on the recommendation of the territorial Council. The two Council members on the Executive Committee are also members of the Advisory Committee on Finance, leaving the third member to be appointed by Council. As part of their administrative duties, one elected member is responsible for the Department of Education and the other for the Department of Health, Welfare and Rehabilitation.

Below the Commissioner's office, the territorial public service, comprising 1,200 persons including 260 teachers, is organized into 11 conventional administrative departments under the direction of the Commissioner; all are located in Whitehorse. In outlying communities territorial government administration is represented by a limited number of territorial agents concerned with the sale of liquor and licences. Health facilities are administered mainly by the federal Department of National Health and Welfare, an involvement stemming from its responsibility for Indians in the Yukon and from practical administrative considerations. The territorial government directs education, under the territorial Department of Education, engineering services and the administration of certain welfare programs.

Some administrative areas such as natural resources, which are the responsibility of the Department of Indian Affairs and Northern Development, are administered by federal public servants. The Commissioner, in addition to his constitutional role in territorial government, is also the Department's senior federal representative in the Territory. The Minister of Justice is the Attorney General of the Yukon Territory for purposes of the Criminal Code of Canada, with responsibility for the administration of criminal justice in the Territory but not for civil matters, or the constitution or organization of the courts. Law enforcement is provided by the Royal Canadian Mounted Police and the contract for its services is negotiated by the territorial government.

A detailed discussion of the territorial court system is presented in Chapter 2.

The Legislature. The Legislative Council consists of seven members elected for a term of four years. In general, all persons resident in the Territory for one year prior to the date of enumeration and 18 years of age are eligible to vote. Three of the members represent electoral districts located in or close to Whitehorse where about two thirds of the some 20,000 residents of the Territory live. As in many other matters, a federal agency, the Office of the Chief Electoral Officer, conducts the territorial elections as a free service to the Territory. Council normally meets in session twice each year. The first session commences in January and as a major part of its work votes on the main territorial estimates, prepared by the Commissioner and approved by Council's Advisory Committee on Finance and the Minister of Indian Affairs and Northern Development. The second session is usually called in November and special sessions can be held at any time. Main sessions last from one to two months and the debates are recorded verbatim and published under the title of *Votes and proceedings*.

The Commissioner calls Council into session and prorogues it; he sits with it only by invitation to explain or defend proposed expenditures, draft legislation or policy papers which he has placed before Council. All sessions are presided over by a Speaker who is appointed by Council from among its members for the duration of each Council but is given no specific responsibilities or authority under the Yukon Act. In practice, he conducts Council proceedings under Rules of Council which are an adaptation of Canadian parliamentary procedures. A Clerk of Council controls the administrative side of its proceedings.

The matters on which Council can legislate are not significantly fewer than those enjoyed by the provinces. The main exceptions concern natural resources. These are a responsibility of the federal government which has to provide the heavy investments in transportation and other facilities needed to bring them into production. Most major policy matters are first placed before Council in the form of a sessional paper prepared by the Commissioner, and the draft legislation is then presented at the next session in the form of a bill, although amendments to existing legislation may be processed concurrently with the sessional paper or without the assistance of this background information. Discussion is usually conducted with the Council resolved into Committee of the Whole, making it possible for the Commissioner, heads of

departments and outside specialists to appear to give detailed information and advice on the subject concerned. Bills are given three readings and require the assent of the Commissioner before they become law as ordinances of the Territory. The Commissioner can reserve assent to legislation but rarely does so. As with provincial legislation, the federal government may disallow any ordinance within one year. New ordinances are published after each session; consolidated ordinances of the Yukon Territory are usually revised every 10 years.

The role of the federal government. Direct federal involvement in the affairs of the territorial government extends from control of its constitution to responsibility for the operation of certain provincial-type services and for providing most of its finances. Beyond these special services, the federal government provides the usual range of national services such as the operation of Canadian Broadcasting Corporation radio stations, mail delivery and mainline airports. Full assistance under all national welfare programs is available in the Territory. Even with special financial assistance in many particular areas, the low volume of local revenues falls far short of meeting the high cost of services provided by the territorial government. The federal government picks up this financial deficit through annual fiscal arrangements known as Federal-Territorial Financial Agreements. The amount of federal financial assistance given to the territorial government is simply the difference between the forecast of revenues available to the territorial government and the forecast of the cost of a reasonable level of services to be provided by that government. In return, the territorial government forgoes any exercise of its authority to tax private and corporate incomes and to collect other corporation taxes and succession duties.

Apart from special accounts such as housing loans and amortization of borrowings from the federal government for which individual arrangements are made, the Yukon government in the year ended March 31, 1973 spent \$27.3 million on operating accounts and another \$10.6 million on capital projects. Of the total expenditure, the territorial government raised \$8.2 million locally and recovered another \$11.7 million from the federal government via shared-cost programs. The remainder was provided by the federal government under its financial agreement with the Territory.

Commissioner, Council and Council staff of the Yukon Territory as at December 31, 1973

Commissioner, J. Smith

Clerk of the Council, Linda J. Adams

Legal Adviser, P. O'Donoghue

Executive Committee: J. Smith, chairman; F.B.

Fingland, vice-chairman and member; M.E.

Miller, Hilda Watson, Clive Tanner, members;

Linda J. Adams, secretary

Members of the Council: Hilda Watson, Mike Stutter, Donald E. Taylor, Ronald A. Rivett, Norman S. Chamberlist, Clive Tanner, John Kenneth McKinnon.

3.3.2.2 Northwest Territories

The Temporary Government Act of 1869 was the first legislation by the federal government to establish government in the newly acquired Rupert's Land and North-Western Territory. However, functional territorial government really dates from the North-West Territories Act of 1875. The creation of Saskatchewan and Alberta in 1905 and the adjustment of the northern boundaries of Manitoba, Ontario and Quebec by 1912 pushed the Northwest Territories north of the 60th parallel. The 1905 legislation provided for a federally appointed Commissioner with wide executive and legislative powers and a Council of four, but no councillors were appointed for 16 years. In 1921 the Council was expanded to six members and, until the first appointment of a territorial resident in 1946, it was composed entirely of senior federal officials.

Defence early warning systems, radio and greatly improved air transportation after World War II ended the extreme isolation of the North and pressures for improved territorial government soon followed. Legislative changes in 1951 and 1952 increased Council membership to eight, three of them elected from the Mackenzie District. A fourth was added in 1954. At least two Council sessions were required to be held in a year, one in the Territories and all others at the seat of government in Ottawa. The subjects on which the Commissioner in Council could legislate were increased to approximate those of the provincial legislatures except that natural resources other than game were reserved to the federal government. A Territorial Court was established in 1952.

Recent constitutional developments. The quickening of federal interest in the North in the 1950s and 1960s stimulated concern and effort to arrange for a resident territorial government and to chart the course of its future development. An amendment to the Northwest Territories Act in 1966 created three new electoral districts in the eastern Arctic and, for the first time, gave elected representation to all residents of the Territories. Also, at the ensuing election the first Eskimo was elected to the territorial Council. A separate consolidated revenue fund was set up for the territorial government and wider powers in other areas of financial administration were introduced.

Meanwhile in 1965 the federal government had appointed an Advisory Commission on the Development of Government in the Northwest Territories which travelled widely in the North to examine the local needs for change. Following receipt of its recommendations in 1966, the federal government acted quickly to provide for a territorial administration resident in the Northwest Territories. Yellowknife was designated as the seat of territorial government. In June 1970, the federal government passed amendments to the Northwest Territories Act changing the number of elected Council members from seven to 10 and decreasing the number of appointed members from five to four. The amendments also extended the life of Council from three to four years, permitted Council to set its own indemnities and to establish the voting age in territorial elections (now set at 18 years subject to a one-year residence requirement), and reduced the period of federal disallowance of territorial ordinances from two years to one.

Changes in territorial administration. Unlike the Yukon Territory, which has had its own public service since the turn of the century, the government of the Northwest Territories, until recently, has been largely dependent on the federal government for staff to implement its legislation and to operate its public services. Until 1963 the Deputy Minister of Northern Affairs was Commissioner, and the Northern Administration Branch of that Department was devoted to operating most government services in the Northwest Territories with federal public servants. In that year a full-time Commissioner was appointed and charged with building up a territorial administration located initially in Ottawa. In September 1967 the Commissioner and about 50 staff members moved to Yellowknife and immediately assumed responsibility for the game management service, municipal affairs, the issuing of all licences, tax collection and the operation of the liquor system (already staffed by territorial contract employees). Operational responsibility for other government services was transferred from federal to territorial control in the Mackenzie District on April 1, 1969, and in the eastern Arctic on April 1, 1970. The territorial government is structured to carry out its administration through four program and four service departments, each under the direction of a senior public servant reporting to one member of the Executive which consists of the Commissioner, the Deputy Commissioner and two Assistant Commissioners. The field staff is organized into four regions with regional directors at Fort Smith, Inuvik, Frobisher Bay and Churchill.

Present government structure. The Northwest Territories Act, 1952, as amended, provides for an executive, legislative and judicial structure. The Commissioner is the chief executive officer, appointed by the federal government and responsible for the administration of the Northwest Territories under the direction of the Minister of Indian Affairs and Northern Development. In practice, all major policy decisions are taken on the advice of this Council. The Commissioner can spend funds only to the extent voted by Council and all new revenue measures are subject to Council approval. Normally, the Commissioner obtains prior federal approval of proposed legislative and budgetary measures before submitting them to Council.

The Council of the Northwest Territories consists of 10 elected and four appointed members and has a life of four years. It meets at least twice a year, usually for three weeks at a January session and two weeks at a spring session, but more often if required. The Commissioner presides over Council sessions and the Deputy Commissioner sits as an appointed member. A Clerk of Council and a Legal Adviser provide the main administrative assistance and debates are recorded verbatim.

The Northwest Territories Act gives the territorial Council authority to legislate in most provincial areas of government activity except for natural resources other than game; these are reserved to the federal government which alone can provide the necessary development funds. Legislation must receive three readings and have the assent of the Commissioner; he can reserve assent but this is a rare occurrence and the federal government may disallow any

ordinance within one year. The Commissioner proposes most legislation but private members bills are allowed except for money matters which are the prerogative of the Commissioner. Besides draft legislation, the Council gives considerable time to policy papers in which the Commissioner asks for advice or seeks authority to take a particular course of action.

The Minister of Justice is the Attorney General of the Northwest Territories under the Criminal Code of Canada, with responsibility for the criminal administration of justice but not for civil matters, or the constitution or organization of the courts. Law enforcement is provided by the Royal Canadian Mounted Police.

Continuing federal responsibility. The Government Organization Act, 1966 charges the Minister of Indian Affairs and Northern Development with responsibility for the development of the North and for the general co-ordination of federal activities in the area. Other federal government agencies, such as the Northern Health Service of the Department of National Health and Welfare and the Royal Canadian Mounted Police, are responsible for health and police services with the territorial government sharing their costs. The Ministry of Transport operates mainline airports throughout the whole of the North; the Canadian Broadcasting Corporation provides special shortwave northern broadcasts and maintains a growing number of local stations in the Territories. Federal cost-shared national assistance programs, within the competence of the territorial government, are available to it on the same conditions as to the provinces.

There are about 7,000 Indians and 13,000 Eskimos in the Northwest Territories for whom the federal government has a special responsibility. As of December 1973, there were no Indian reserves in the Territories but two treaties were entered into which established certain claims to land and certain other rights. As in the provinces, legislative authority with respect to Indians and lands reserved for Indians is vested exclusively in the federal government and this authority extends to Eskimos.

Extensive financial assistance is given to the territorial government under special federal-territorial agreements, usually spanning a period of five years. These agreements serve both to allocate the financial responsibility of each government for the provision of services in the Territories and to fix the amount of the federal financial payments to the territorial government for the life of the agreement. At the present stage of development, territorial revenues fall far short of meeting the expenditures of the territorial government. Under the financial agreements, all taxes on personal and corporate incomes, corporation taxes and succession duties are reserved to the federal government.

Excluding amortization of borrowings, the territorial government, during the year ended March 31, 1973, spent about \$86 million on operating accounts and about \$25 million on capital projects. Of these expenditures, approximately \$10.3 million was raised within the Territories through taxes, licences and liquor revenues and \$5.6 million was recovered from residents of the Territories for services supplied. A further \$8.9 million was recovered under federal shared-cost programs. The remainder was provided by the federal government as special operating grants and loans under the financial agreement. Of the special operating grant \$5 million can be identified as personal and corporate income taxes collected within the Territories.

Commissioner, Council and Council staff of the Northwest Territories as at December 31, 1973

Commissioner, S.M. Hodgson

Deputy Commissioner, J.H. Parker

Clerk of the Council, W.H. Remnant

Legal Adviser, F.G. Smith

Appointed members of the Council: J.H. Parker,

Hugh Campbell, Louis-Edmond Hamelin, Pierre

Genest

Elected members of the Council: Lena Pedersen,

Bryan Pearson, Jimmy Rabesca, Paul W. Kaeser,

Paul Koolerik, Willie Adams, Lyle R. Trimble,

Nick G. Sibbeston, Tom Butters, David Searle.

3.4 Royal Commissions and Commissions of Inquiry

3.4.1 Federal commissions

Royal Commissions, now generally called Commissions of Inquiry, established up to May 1, 1970 under Part I of the Federal Inquiries Act are given in previous editions of the *Canada Year Book* beginning with the 1940 edition. The only commission appointed between that date and December 31, 1973 was the Airport Inquiry Commission under Chairman Hon. Justice

Hugh F. Gibson, established October 5, 1973. Federal Commissions submitting final reports between those dates are: Farm Machinery costs, Chairman C.L. Barber, on May 18, 1971 and Status of Women in Canada, Chairman Mrs. J. Bird, on September 28, 1970.

3.4.2 Provincial commissions

The following list presents the provincial Commissions established between May 1, 1970 and December 31, 1973, the name of the chief commissioner or chairman, and the date each was established:

Newfoundland

St. John's Arterial Road, T.J. Dalton, September 17, 1971
 Land Holiday Inn, G.M. Stirling, April 27, 1971
 Royal Commission on Magistracy, Geoffrey L. Steele, January 13, 1972
 Blackhead Road Urban Renewal Scheme, L. Kostaszek, October 1, 1971
 Nursing Education, Leonard A. Miller, January 12, 1972
 Leases for Premises for Newfoundland Liquor Commission, Fabian O'Dea, February 29, 1972
 Bell Island, Hon. Mr. Justice A.S.M. Mifflin, August 8, 1972
 Labrador, Donald Snowdon, October 23, 1972
 Mrs. Ruth Thompson, Magistrate Gordon Seabright, December 18, 1972
 Illegal Work Stoppages, Edward A. Neary, January 12, 1973
 Municipal Government in Newfoundland, Hugh Whalen, August 1972
 Mineral Taxation, Gordon Goundry, November 13, 1973
 Workmen's Compensation Board, Magistrate H. O'Neill, August 8, 1972.

Prince Edward Island

To inquire into land use and ownership in Prince Edward Island, Charles W. Raymond, August 9, 1972
 To inquire into aspects of the dairy industry in Prince Edward Island, Ernest Brennan, November 22, 1973
 To inquire into the purchase of Gregors By-the-Sea property by the PEI Land Development Corporation and 63 acres of land in East Royalty by the PEI Housing Authority, direction re public records, E. Somerled Trainor, February 14, 1974.

Nova Scotia

Discontinuance or abandonment of fish processing plant of Acadia Fisheries Limited at Mulgrave and fishing plant of Booth Fisheries Limited at Petit de Grat, Ian H. Palmeter, August 20, 1970
 Education, public services and provincial-municipal relations, John F. Graham, March 31, 1971
 Automobile insurance, A.I. Barrow, August 3, 1971
 To consider the adequacy of indemnities allowances and salaries paid under the House of Assembly Act, the Executive Council Act and the Members' Retiring Allowance Act, W. Andrew MacKay, December 21, 1973.

New Brunswick

Representation and electoral boundaries commission, established October 10, 1970.

Quebec

Automobile insurance, Jean-Louis Gauvin, May 5, 1971.

Ontario

To inquire into alleged improper relationships between personnel of the Ontario Provincial Police Force and any person or persons of known criminal activity, Mr. Justice Campbell Grant, July 28, 1970
 To inquire into the suspension of Frederick B. Allore as Superintendent of Separate Schools by the Hastings and Prince Edward County Roman Catholic School Board, Judge A.R. Campbell, November 17, 1970
 To conduct an examination and report upon the publishing industry in Ontario and throughout Canada with respect to its position within the business community, Richard Heath Romer, December 20, 1970
 To inquire into any improper disclosure of the contents of a report prepared for the Government of Ontario entitled "Niagara Escarpment Study — Conservation and Recreation Report", His Hon. Colin E. Bennett, May 21, 1971
 To inquire into the procedures and decisions adopted by The Leeds and Grenville County Board of Education in the construction of a public school, His Hon. G.G. Nicholls, July 23, 1971
 To inquire into the egg industry in Ontario, His Hon. James Frederick William Ross, September 19, 1971
 To study the function of the Legislative Assembly with particular reference to the role of the Private Members, Dalton Kingsley Camp, June 14, 1972
 To inquire into the transmission of power from Nanticoke to Pickering and to examine the proposed route of hydro transmission facilities between Oshawa and Lennox, Dr. Omond Solandt, March 21, 1973
 To inquire into the plastering, lathing, dry-walling, concrete forming and allied sectors of the building in-

dustry in Metropolitan Toronto, Hamilton, Ottawa, and other areas, His Hon. Judge Harry Waisberg, March 28, 1973

To inquire into the affairs of the Township of Kingston concerning the implementation of the proposal to expand the existing water and sewage facilities of the said Township, His Hon. Edward M. Shortt, May 16, 1973

To inquire into the Metropolitan Toronto School Board and the Boards of Education that have jurisdiction in the Municipality of Metropolitan Toronto, Barry Lowes, June 13, 1973

To make recommendations on the appropriate number of electoral districts in the Province, Mr. Justice Campbell Grant, December 19, 1973.

Manitoba

To examine the boundaries and municipal structure of the city of Brandon, Dr. Andrew Lloyd Dulmage, December 23, 1970

Inquiry re Churchill Forest Industries (Manitoba) Ltd., Hon. Mr. Justice C. Rhodes Smith, January 29, 1971.

Saskatchewan

To make recommendations respecting the readjustment of the constituency boundaries of the Province of Saskatchewan, Hon. Mr. Justice P.H. Maguire, July 18, 1972

To examine the administrative structure of the University of Saskatchewan and to report suggested changes in the present university system, Hon. Mr. Justice Emmett M. Hall, May 3, 1973.

Alberta

To investigate the circumstances of the detention of Frank Joseph Edward Davy in a public hospital, Justice J.V.H. Milvain, February 20, 1973

To inquire into the degree of government responsibility involved in the establishment and operation of the Town of Grande Cache, N.R. Crump, February 22, 1973.

British Columbia

Gastown disturbance August 7, 1971, His Hon. Judge T.A. Dohm, September 7, 1971

Employer-employee relations in the public service of the province, R.D. Higgins, October 19, 1972

Campbell River and District General Hospital construction tendering, Dr. H.L. Purdy, December 12, 1972

Post-secondary education in the Kootenays, Dr. I. McTaggart-Cowan, April 25, 1973

Control of use of pesticides and herbicides, and plant pest control mechanisms, Dr. Courtland J.G. Mackenzie, May 18, 1973

The family and children's law commission, Hon. Mr. Justice T.R. Berger, December 3, 1973.

3.5 Local government

Local government in Canada comprises all government entities created by the provinces and territories to provide services that can be more effectively discharged through control at the local level. Broadly speaking, local government services are identified in terms of nine main functions: protection, transportation, environmental health, public health, welfare, environmental development, recreation, community services and education. In addition local government, through the medium of government enterprises, may operate such facilities as public transit and the supply of electricity and gas. Education is normally administered separately from the other local functions.

Many local government organizations antedate Confederation but under the British North America Act local government was made a responsibility of the provincial legislatures, a responsibility subsequently extended to the territories when their governments were constituted in the present forms. The unit of local government, apart from the school board, is usually the municipality which is incorporated as a city, town, village, township or other designation depending on the province. The powers and responsibilities of municipalities are those delegated to them by statutes passed by their respective provincial or territorial legislatures. Some of these statutes apply to all municipalities within a province, some to a certain type or group, and many to one municipality only.

Rapid and continuing urbanization during the past two decades and the demand for services in rural areas comparable to those available in urban areas have placed great strains on local government. These strains have been aggravated by the inelasticity of the major local revenue source — the taxation of real property. At the same time the small populations of most municipalities have hindered attempts to provide services that require economies of scale for efficient operation.

The provinces have taken a number of steps to assist local governments to meet these challenges. An increasing number of special agencies or joint boards and commissions have been created to provide certain services for groupings of municipalities. Local government revenue has been supplemented by grants from the provinces, either made unconditionally or for specific purposes. Certain functions traditionally assigned to local government have been assumed in whole or in part by the provinces. Besides encouraging the amalgamation of small units, the provinces have also established new levels of local government to provide services which can be better discharged at a regional level. "Second-tier" local governments now cover the whole of British Columbia and are planned for all of Ontario, where several now exist, and for Quebec, where three have been established. What may become a pattern for the next stage in municipal development was established in Manitoba on January 1, 1972 when the Metropolitan Corporation of Greater Winnipeg and its constituent municipalities were amalgamated into a single city.

The major local revenue source available to local government is the taxation of real property, supplemented in varying degrees by taxation of personal property, businesses and amusements. Revenue is also derived from licences, permits, rents, concessions, franchises, fines and surplus funds from municipal enterprises.

Since a description of all forms of local government would be too complex for easy comprehension, the following paragraphs describe only municipal organization in each province and in the territories as at January 1, 1973. Table 3.6 gives the total number of each type of municipality in each province and territory.

Newfoundland. At January 1, 1973, Newfoundland had 274 incorporated areas including two cities, 93 towns, eight rural districts, 52 local improvement districts, 118 local government communities and one metropolitan area. The towns, rural districts and local improvement districts operate under the Local Government Act; towns and rural districts have elected councils and local improvement districts have appointed trustees. Local government communities are established under the Community Councils Act in the smaller settlements and have limited powers and functions. The St. John's Metropolitan Area, incorporated under a special Act, covers the area adjoining and surrounding the city of St. John's and the town of Mount Pearl and is similar in organization to a local improvement district. There are no rural municipalities in the usual sense. Only about one fifth of 1% of the total area is municipally organized. Municipalities are supervised by the Department of Municipal Affairs and Housing.

Prince Edward Island. In this province, one city and seven towns have been incorporated under special Acts and 25 villages have been established under the Village Services Act. There is no municipal organization for the remainder of the province, although it is divided into three counties which are subdivided into school sections with elected school boards. The organized municipalities are administered by the Department of Community Services.

Nova Scotia. This province is geographically divided into 18 counties; 12 of these constitute separate municipalities and the remaining six are each divided into two districts or municipalities, making a total of 24 rural municipalities. Within and under the jurisdiction of these municipalities there are 25 incorporated villages that provide limited services. In addition, there are three cities operating under special charters and special legislation and 38 towns operating under the Town Incorporation Act. Although geographically located within counties or districts, cities and towns are entirely independent of them except as to joint expenditures. There is no part of the province that is not municipally organized. Supervision of municipalities is exercised through the Department of Municipal Affairs.

New Brunswick. In New Brunswick municipal organization now includes six cities, 21 towns and 96 villages. The remainder of the province is not municipally organized and is administered by the provincial government. There are 196 unincorporated local service districts established to provide services that are municipal in nature but these are administered by the Department of Municipal Affairs and are not municipal organizations. Municipalities are supervised by the Department of Municipal Affairs.

Quebec. The more densely settled areas of Quebec, comprising about one third of the area of the province, are municipally organized; the remainder is governed by the province as "territories". The organized area is divided into 74 county municipalities which look after matters of general interest within the county. Cities and towns are excluded from the county system

for political and administrative purposes except for certain joint expenditures. The remaining municipal corporations and the unorganized territory within counties fall under the county system. The counties have no direct powers of taxation; funds to finance the services falling within their jurisdiction are provided by the municipalities forming part thereof. The municipalities are governed by Special Charter, by the Cities and Towns Act or by the Municipal Code. On January 1, 1973, there were 1,590 municipalities comprising 68 cities, 199 towns, 279 villages, 499 parishes, 155 townships, 14 united townships and 376 municipalities without designation. Major municipal consolidations began in 1965 with the fusion of the 14 municipalities on Île Jésus into the new city of Laval. At the beginning of 1970, the Montreal and Quebec Urban Communities and the Outaouais Regional Community were established in which integration of services will be staged gradually. Supervision of and assistance to municipalities are through the Department of Municipal Affairs and the Quebec Municipal Commission.

Ontario. Slightly more than one tenth of Ontario's area includes 95% of its total population and is municipally organized; the remainder is under direct provincial administration. The settled section of the province is divided into one metropolitan municipality, five regional municipalities, one district municipality and 33 counties. In addition, there are 35 cities, six separated towns, five boroughs, 143 towns, 141 villages, 519 townships and 14 improvement districts. The Municipality of Metropolitan Toronto, in existence since January 1, 1954, encompasses one city and five boroughs and is responsible for assessments, police, water supply, sewerage, metropolitan road systems, planning, etc. The regional municipalities of Niagara, Ottawa—Carleton, Sudbury, Waterloo and York have replaced the county administrations in their respective areas and assumed certain responsibilities over all the municipalities within their boundaries. The District Municipality of Muskoka was incorporated on January 1, 1971 to assume responsibilities, similar to those of the regional municipalities, over the reorganized municipalities of the former district of Muskoka. This form of regional government in Ontario is also contemplated in other areas. Each county, although an incorporated municipality, comprises the towns (with the exception of six separated towns), villages and townships situated within it. Some municipalities are located outside the counties in areas called districts. These districts are in the western and northern parts of Ontario and are not municipal entities. Supervisory control of municipalities is exercised by the Department of Municipal Affairs and the Ontario Municipal Board under the Municipal Act and other Acts governing aspects of municipal government.

Manitoba. Manitoba has five cities, 33 towns, 41 villages and 105 rural municipalities. These are supervised by the Department of Municipal Affairs under the Municipal Act and special charters. However, the Metropolitan Corporation of Greater Winnipeg is responsible to the Department of Urban Affairs except for financial matters, for which it reports to the Department of Municipal Affairs. There are 19 local government districts incorporated under the Local Government Districts Act where the province has placed a resident administrator to carry out the functions of a municipal council. The unorganized areas are the direct responsibility of the provincial government.

Saskatchewan. All municipalities in Saskatchewan derive their powers from general Acts that are designated with the name of the type of municipality. There are 11 cities, 131 towns, 352 villages and 292 rural municipalities. The area so organized consists of most of the southern part of the province, the remainder of this portion being administered by the province through nine unincorporated local improvement districts. The northern part is sparsely populated and some municipal services are provided by the province through the operation of the Northern Administration District. Municipalities are supervised by the Department of Municipal Affairs.

Alberta. This province has an Act applying to each type of municipality and, under these Acts, the Department of Municipal Affairs supervises the nine cities, 102 towns, 168 villages, 18 municipal districts and 30 counties. The counties administer schools in addition to municipal functions. There are 24 improvement districts administered directly by the Department of Municipal Affairs and three special areas under the Special Areas Board also responsible to the Department of Municipal Affairs.

British Columbia. In 1967, the government of British Columbia instituted regional government in the province and by January 1, 1972, 28 regional districts had been established. These regional districts are developing and are assuming responsibility for certain services from municipalities within their boundaries as well as providing services to previously unorganized areas. There are 31 cities, 14 towns, 59 villages and 39 districts. Districts are mostly rural although some adjacent to the principal cities of Vancouver and Victoria are largely urban in character. Municipalities are supervised by the Department of Municipal Affairs. In addition, there are unincorporated local districts supervised by the Department of Lands, Forests, and Water Resources that have been set up to provide certain municipal services such as protection, waterworks, irrigation, etc.

Yukon Territory and Northwest Territories. In the Yukon Territory, there are two cities, one village and three local improvement districts; the Northwest Territories includes one city, three towns and three hamlets. The local improvement districts in the Yukon and the hamlets in the Northwest Territories, although incorporated, are developmental forms of local government. Supervision of these municipalities is provided by the respective territorial governments.

3.6 External relations

3.6.1 Canada's international status

The growth of Canada's international status is reflected in the development of the Department of External Affairs. Until the 20th century Canadian negotiations with foreign countries were conducted through the British Foreign Office and dealings with other parts of the Empire through the Colonial Office; Canadian interests abroad were handled by British diplomatic and consular authorities and all Canadian communications to other governments went through the Governor General. The gradual recognition of Canadian autonomy in international affairs and increased Canadian responsibilities abroad made expansion of services and representation after 1920 not only inevitable but imperative. British diplomatic and consular authorities could no longer conveniently look after all Canadian interests. An important step in the evolution of the Department of External Affairs as the foreign service arm of the Canadian government resulted from an agreement reached at the 1926 Imperial Conference which changed the Governor General's role from that of representative of the British government to that of personal representative of the Sovereign. Britain, no longer officially represented here, appointed a High Commissioner to Canada in 1928; after July 1, 1927 correspondence from foreign governments, including that from the Dominions Office in London, was directed to the Secretary of State for External Affairs (a portfolio held by the Prime Minister until 1946) instead of to the Governor General.

In the 1920s and 1930s Canada established diplomatic relations with Australia, Belgium, France, Ireland, Japan, the Netherlands, New Zealand, South Africa and the United States and during the 1940s, with the wartime governments of Belgium, Czechoslovakia, Greece, the Netherlands, Norway, Poland, Yugoslavia functioning in London or Cairo, and with the Argentine Republic, Brazil, Chile, China, Cuba, Mexico, Newfoundland, Peru and the USSR. High Commissioners were accredited to India, Pakistan and Ceylon (Sri Lanka) and subsequently to other countries as they became independent and joined the Commonwealth. In the 1960s, Canada also developed its diplomatic relations in the French-speaking world, particularly with the newly independent francophone states of Africa. Relying on a system of multiple accreditation, Canada now has ambassadorial links with all of the 21 francophone African countries. Diplomatic relations were established with the Holy See in 1969 and with the People's Republic of China in 1970. Today, Canada maintains formal diplomatic relations with all 20 countries in Latin America and has diplomatic, consular or trade representation in 127 countries.

Membership in international organizations has entailed establishment of other offices outside Canada. A Permanent Canadian Delegation to the United Nations in New York was set up in 1948; a year later a Canadian office was opened at the organization's European headquarters in Geneva. Now called Permanent Missions, these offices have since been expanded. As one of the founding members of the North Atlantic Treaty Organization (NATO) in 1949 Canada remains active in the Organization. When the NATO Permanent Council was established in 1952 a Canadian Permanent Delegation was set up in Paris (transferred to Brussels in

1967). A Canadian Permanent Delegation to the Organization for Economic Co-operation and Development is in Paris. In addition to these permanent international bodies and their various committees, officials of the Department of External Affairs represent Canada at many international conferences.

3.6.1.1 Diplomatic and/or consular representation

The addresses of Canadian representatives abroad and representatives of other countries in Canada may be found in Appendix 5.

3.6.1.2 Federal-provincial aspects of Canada's international relations

As a result of expanding provincial interests abroad machinery was established in 1967 within the Department of External Affairs to maintain liaison with the provinces and to facilitate their international activities in a manner that would fully meet provincial objectives and at the same time be consistent with a unified Canadian foreign policy.

The federal government's position was outlined in the 1968 White Paper *Federalism and international relations*, which emphasized that Canada's foreign relations must serve the best interests of all provinces as well as those of its two major linguistic communities. To this end federal government policies include continued promotion of national unity through adequate projection internationally of Canada's distinct bilingual character, preservation of Canada's international personality and appropriate recognition of legitimate provincial interests beyond national borders.

Provincial participation at international conferences and in the work of international organizations on a wide range of subjects, including human and civil rights, education, health, agriculture and labour, is assured by the inclusion of interested provincial officials on Canadian delegations and by the canvassing of provincial governments for their views on the positions and attitudes which Canada might adopt on these subjects internationally.

Other aspects of Canada's international relations of particular interest to the provinces include the promotion of trade, investment, new industries, immigration, tourism, cultural exchanges, environmental questions, science and technology, assistance to developing countries and bilateral and multilateral agreements. The promotional activities of the provinces have led to an increase in the number of official provincial visits abroad. The federal government, through the Department of External Affairs and its Embassies and High Commissions, assists provincial officials by making arrangements and appropriate appointments for their visits abroad and in co-ordinating visits of foreign personalities to provincial capitals.

In matters of aid to developing countries, the federal government encourages wider federal-provincial consultation to ensure that specific projects initiated by the provinces are co-ordinated with Canada's aid contribution as a whole.

Similarly, when the terms of treaties, conventions and other formal agreements between Canada and other countries touch on provincial or joint federal-provincial fields of jurisdiction, the federal government consults with the provinces before or during the negotiating stage to harmonize federal and provincial interests.

3.6.2 International activities

3.6.2.1 Canada and the Commonwealth

Originally a tightly knit coalition of five members, the Commonwealth has evolved into an international association of 33 sovereign states embracing approximately one quarter of the earth's land surface and population, the latter characterized by a diversity of races, colours, creeds and languages. Comprising both developed and developing countries, and governments committed to various international organizations, the Commonwealth represents a unique association whose members are bound by shared political and social values, similar attitudes and institutions, a similar political and historical experience, and a common language. The interests of its members extend to all continents.

Commonwealth members (with the year when membership was proclaimed in parentheses if post-1931) are as follows: Australia; Britain; Canada; New Zealand; Bangladesh (1972); Barbados (1966); Botswana (1966); Cyprus (1961); Fiji (1970); Gambia (1965); Ghana (1957); Grenada (1974); Guyana (1966); India (1947); Jamaica (1962); Kenya (1963); Lesotho (1966); Malawi (1964); Malaysia (1963) — when Singapore, Sarawak and Sabah joined the Federation in 1963, Malaya became Malaysia; Malta (1964); Mauritius

(1968); Nauru (Special Member); Nigeria (1960); Sierra Leone (1961); Singapore (1965) — Singapore separated from Malaysia in 1965; Sri Lanka (Ceylon) (1948); Swaziland (1968); Tanzania (1964) — in 1964 Tanganyika and Zanzibar joined to form the United Republic of Tanzania; Tonga (1970); Trinidad and Tobago (1962); Uganda (1962); Western Samoa (1970); Zambia (1964). Papua New Guinea will also become a member of the Commonwealth after it attains independence. Nauru, which became fully independent in 1968, has special membership in the Commonwealth which entitles it to all the advantages of membership except attendance at Heads of Government meetings. Through their association with Britain, which has retained responsibility for foreign affairs and defence, the five Eastern Caribbean Associated States of Antigua, Dominica, St. Kitts—Nevis—Anguilla, St. Lucia and St. Vincent are also involved in the Commonwealth.

Membership in the Commonwealth is an important aspect of Canadian foreign policy. Canada has consistently supported its expansion and development as a vigorous and effective association working for international peace and progress. Canadian objectives have remained constant: to strengthen the association, to encourage more active participation in it by members, and to assist the development of the association as a vehicle for practical co-operation. The organization has no binding rules, and decisions are reached through consensus rather than formal vote.

The Commonwealth Secretariat was established in 1965 by Heads of Government and is located in Marlborough House in London. It organizes and services official Commonwealth conferences, facilitates the exchange of information between member countries and collates their views. Canada's assessment to the 1973-74 budget of the Secretariat was 19.19% of the total, or approximately \$470,000. In 1973 Canada contributed approximately \$4.75 million to various Commonwealth institutions and programs.

The most important duty of the Secretariat is the organization of Commonwealth Heads of Government Meetings. The last Meeting was held in Ottawa in August 1973; the next will be held in Jamaica in April 1975, and will be hosted collectively by the Commonwealth Caribbean countries. Major Commonwealth conferences held in 1973-74 included the Commonwealth Finance Ministers Meeting in Dar-es-Salaam in September 1973, the biennial Meeting of Commonwealth Senior Officials in London in May 1974, the Sixth Commonwealth Education Conference in Kingston, Jamaica, in June 1974 and the annual meeting of Commonwealth Finance Ministers, in Ottawa in September 1974.

3.6.2.2 Canada and the French-speaking community

The federal government is anxious to demonstrate the different aspects of Canadian society, especially Canadian bilingualism, internationally, and fosters the broadening and strengthening of ties with francophone countries. In the last few years traditional relations with the French-speaking countries of Europe have been considerably expanded and diversified, particularly in the scientific and technological fields. These relations have been complemented by the establishment of ties with the French-speaking countries of the Third World. In addition to development aid, which remains the principal contact, there has been a gradual growth of cultural and economic exchange.

Canada also plays an important role within multilateral organizations such as the Agency for Cultural and Technical Co-operation, of which it is a founding member. The First International Francophone Youth Festival, sponsored by the Agency in conjunction with the Quebec government, was held in Quebec City in August 1974. Canada is also a member of the Conference of Ministers of Education and the Conference of Youth and Sports Ministers of francophone countries; their annual meeting was held in 1974 in Montebello, Que.

The federal government is not alone in its efforts to draw francophone countries and Canada closer. On the bilateral level, the provinces are invited to take part in the work of joint commissions and in the implementation of Canadian government aid programs. On the multilateral level, New Brunswick, Ontario and Manitoba participate in some of the Agency's activities and the federal government and the Quebec government have agreed on an arrangement under which the latter has a more distinct status within the Agency's institutions, activities and programs.

There are also various private French-language associations that work to develop relations between their members around the world. The establishment of the Agency has stimulated their activities and has led to the creation of a number of new organizations. The Canadian

government supports several that are either Canadian or have significant Canadian participation.

3.6.2.3 Canada and the United Nations

Firm support for the United Nations is an essential element of Canadian foreign policy. Over the years Canada has contributed to UN peacekeeping efforts in various parts of the world, including the Middle East, Kashmir, the Congo, West Irian and Cyprus. For many years this country has maintained a large contingent in Cyprus (UNFICYP) to assist the UN in an attempt to prevent open fighting between the Greek and Turkish communities. Canada has consistently advocated strengthening the UN's peacekeeping capacity by advance planning at UN headquarters and advance cost-sharing arrangements.

Canada also participates directly in the work of the UN through its membership in various UN bodies including the 13 specialized agencies and the International Atomic Energy Agency. The International Civil Aviation Organization in Montreal is the only specialized agency of the UN with headquarters in this country.

Canada belongs to 18 subsidiary or ad hoc bodies of the General Assembly, including the Committee on the Peaceful Uses of Outer Space, the Disarmament Commission, the Special Committee on Peacekeeping Operations, the United Nations Scientific Committee on the Effects of Atomic Radiation, the Board of Auditors, the United Nations Scientific Advisory Committee, the Conference of the Committee on Disarmament, and the Committee on the Peaceful Uses of the Sea-Bed and Ocean Floor Beyond the Limits of National Jurisdiction. Canada maintains Permanent Missions to the UN in New York and Geneva.

Canada pays 3.08% of the organization's regular budget and is the eighth largest contributor. In the UN financial year 1973, Canada's share of the net expenditures of about \$229 million was approximately \$6.1 million. The cost to Canada of maintaining its contingent in Cyprus was about \$1.6 million in 1972-73. In addition, Canada makes voluntary contributions to special UN programs such as the United Nations Development Programme (UNDP), the United Nations High Commissioner for Refugees (UNHCR), the United Nations Children's Fund (UNICEF), the United Nations Relief and Works Agency in the Middle East (UNRWA) and the World Food Programme (WFP).

Canada became a member of the Economic and Social Council (ECOSOC) in 1973 when the amendment to the UN charter enlarging the Council from 27 to 54 members was ratified and took effect. Canada's first term of membership is for one year. As well as becoming a member of ECOSOC itself, Canada holds membership in a number of its important subsidiary or related bodies, including the Economic Commission for Europe (to which Canada was elected at the 55th session), the Economic Commission for Latin America, the Committee on Natural Resources, the Committee on Science and Technology for Development, the Committee on Review and Appraisal, the Commission on the Status of Women and the Commission on Narcotic Drugs. Canada was also elected in 1973 to the Statistical Commission and to the Committee on Housing, Building and Planning. Canadians serve in a personal capacity on the Advisory Committee on the Application of Science and Technology to Development, the Committee on the Elimination of Racial Discrimination and on the International Narcotics Control Board.

Canada serves on the Governing Council of the UN Development Programme and on the Executive Board of UNICEF, is a member of the Trade and Development Board of the UN Conference on Trade and Development (UNCTAD) as well as a member of all UNCTAD's main Committees — Commodities, Manufacturing, Shipping, and Invisibles and Financing relating to Trade — and is a member of the Executive Committee of the Office of the United Nations High Commissioner for Refugees. It is also a member of the Governing Council of the United Nations Environmental Programme and has pledged between \$5 million and \$7.5 million to the Voluntary Fund for the Environment for the period 1973-78.

Canada's cumulative assessment and contributions to the UN, its specialized agencies and related bodies totalled approximately \$666.2 million between 1945 and 1973, and about \$58 million in 1972-73. A breakdown of Canadian contributions to UN agencies in 1972-73 and 1973-74 is given in Table 3.7, along with the total contribution 1945-74. The Canadian subscription to the World Bank (the International Bank for Reconstruction and Development) amounts to US\$942 million or 3.7% of the total. The International Development Association, an affiliate of the World Bank, has received from Canada interest-free contributions or pledges

amounting to the equivalent of \$304.5 million in current US dollars since it was established. The International Finance Corporation, also a member of the World Bank Group, has a paid-in capital of about US\$107 million, of which the Canadian subscription amounts to US\$3.6 million.

Specialized agencies. Canada is a member of each of the following 13 specialized agencies of the UN: the International Labour Organization (ILO); the Food and Agriculture Organization (FAO); the World Health Organization (WHO); the United Nations Educational, Scientific and Cultural Organization (UNESCO); the International Civil Aviation Organization (ICAO); the International Telecommunication Union (ITU); the World Meteorological Organization (WMO); the Intergovernmental Maritime Consultative Organization (IMCO); the Universal Postal Union (UPU); the International Monetary Fund (IMF); and the World Bank Group consisting of the International Bank for Reconstruction and Development or World Bank (IBRD); the International Finance Corporation (IFC) and the International Development Association (IDA). In addition, Canada belongs to the International Atomic Energy Agency. Details relating to the establishment and programs of these agencies will be found in the *1973 Canada Year Book* pp 155-158. Canada's financial contributions to them are included in Table 3.7.

3.6.2.4 Canada and the Conference of the Committee on Disarmament

The Canadian government has long stressed international efforts to work for a safer world through arms control and disarmament. Canada is an active member of the Conference of the Committee on Disarmament (CCD), a 26-nation negotiating body. This Committee, of which the United States and the Soviet Union are co-chairmen, represents in microcosm the world-wide concern to stop the arms race. The CCD is currently seeking a comprehensive prohibition of nuclear weapons testing including underground tests, and a ban on the research, development, production and stockpiling of chemical weapons.

3.6.2.5 Canada and Mutual Balanced Force Reductions in Central Europe

Canada participated in the Conference on the Mutual Reduction of Forces and Armaments and Associated Measures in Central Europe, which opened officially in Vienna on October 30, 1973.

3.6.2.6 Canada, the North Atlantic Treaty Organization and NORAD

In the Defence White Paper of August 1971 the government "reaffirmed Canada's adherence to the concept of collective security, and announced that Canada would continue to station significant though reduced forces in Europe as part of the NATO integrated force structure. . . . The decision reflected the government's judgment that Canadian security continues to be linked to West Europe and that Europe is still probably the most sensitive point in the East-West balance of power. It is the area from which any conflict, however limited, might most readily escalate into all-out nuclear war engulfing Canadian territory."

In light of this statement 1973 was a particularly active year for the NATO Alliance in its continuing search for both military stability and political détente in Europe. As one of the founding members of the Alliance, Canada continued to play a prominent role in all NATO activities.

The encouraging results of the Federal Republic of Germany's *Ostpolitik* and the agreements reached between the United States and the Soviet Union on the limitation of strategic arms contributed significantly to the movement toward political détente in 1972 and 1973 and set the stage for participation by the NATO allies in two sets of East-West talks: the Conference on Security and Co-operation in Europe (CSCE), and the Mutual and Balanced Force Reductions (MBFR). Canada played an important part in the conferences on these subjects convened in 1973.

As part of its contribution to the collective defence of the Alliance Canada continued to station land and air elements numbering about 5,000 men in the Federal Republic of Germany. In addition, Canadian naval units in the North Atlantic remained earmarked for assignment to the NATO Standing Naval Force in the event of an emergency. Naval, land and air elements of the Canadian Forces serving with NATO continued to participate in exercises designed to maintain NATO forces at an optimum degree of readiness for combat.

Canada also co-operates with the United States in the defence of the North American sector of the Alliance through participation in the North American Air Defence Command

(NORAD), an integrated command system combining air defence units from both countries. The NORAD agreement setting up the command was reviewed in 1973 and extended for a two-year period through May 1975.

As a forum for allied consultation, NATO is also involved in non-military activities. The NATO Committee on the Challenges of Modern Society, along with the NATO Science Committee, is concerned with exchanges of views, experience and information among NATO countries on scientific, ecological and environmental problems. Canada has participated actively in this committee and extended an invitation to the NATO Council to host the plenary meeting of the NATO CCMS Committee in April 1973. Canada is also one of the leading participants in the projects dealing with pollution of inland and coastal waters. The adjunct bodies of NATO such as the North Atlantic Assembly and the Atlantic Treaty Association, also contribute to the usefulness of the alliance as a forum for exchanging views.

3.6.2.7 Canada and the United States

Relations with the United States are of vital importance to Canada and constitute what is in many respects a unique phenomenon in international relations. Geography has made the two countries neighbours and community of interest has made them friends, while the demographic realities and economic patterns present Canada with the challenge of living distinct from but in harmony with the world's most powerful nation. The two countries are one another's best customer: Canada sells to the United States just less than three quarters of all exports and buys almost one fifth of all US exports in an exchange of goods that now totals close to \$33 billion a year.

Co-operation in bilateral and multilateral affairs continues to demonstrate shared interests of both countries. Canada, like the US, is an active member of the United Nations and its many specialized agencies, participates in the North Atlantic Treaty Organization (NATO), the General Agreement on Tariffs and Trade (GATT), the Organization for Economic Co-operation and Development (OECD), and other important international organizations at which opportunities are provided to share viewpoints. Bilaterally, there are many official and technical committees and bodies which facilitate co-operation between the two countries and provide for a free interchange of information and opinions on matters of mutual interest ranging from economic matters to defence, to maintenance of clean environments. A key agency is the International Joint Commission, an independent agency jointly established by the United States and Canada to deal with the regulation of flows of boundary waters and the abatement of transboundary air and water pollution. It is responsible for administering the Great Lakes Water Quality Agreement of 1972.

3.6.2.8 Canada and the Commonwealth Caribbean

The current phase of Canadian relations with the Commonwealth Caribbean dates from the Commonwealth Caribbean-Canada Conference of 1966, which established the broad guidelines for developing relations between the two areas. Considerable progress has been made in implementing the recommendations agreed to at that Conference. As part of the continuing process of consultation, a special Canadian Mission to the Commonwealth Caribbean in the fall of 1970 visited 13 countries and territories to discuss specific matters of common interest.

By the end of 1973 Canadian investment in the region was estimated at over \$500 million. In the same year, Canadian imports from the region totalled \$70.0 million while exports were valued at \$128.9 million. Canadian bilateral development assistance to the Caribbean began in 1958 and has averaged approximately \$20.0 million a year in loans and grants in recent years. It has been concentrated in the sectors of education, air transport, water supply and agriculture. Funds have also been made available on a multilateral basis through various organizations including the United Nations and the Caribbean Development Bank.

More than 3,000 Canadians are permanent residents in the region and over 200,000 visit the islands annually. During 1973, 21,900 West Indians immigrated to Canada. There are Canadian High Commissions in Jamaica, Trinidad and Tobago, Guyana, and Barbados, and these four countries maintain High Commissions in Ottawa. There is also a Commissioner for the Eastern Caribbean in Montreal who represents the five West Indies Associated States (Antigua, Dominica, St. Kitts-Nevis-Anguilla, St. Lucia and St. Vincent), Montserrat, and Grenada.

3.6.2.9 Canada and Latin America

Canada maintains diplomatic relations with all the Latin American countries through 13 resident missions, some with dual or multiple accreditation. As envisaged in the foreign policy paper on Latin America published in 1970, substantial progress has been made in developing and intensifying relations with these countries and with inter-American institutions.

In 1972 Canada became one of the first nations to be accredited as a Permanent Observer of the Organization of American States (OAS); a Canadian Permanent Observer Mission was opened in Washington under an Ambassador accredited to the OAS. Canada has been a member of five inter-American organizations linked with the OAS — the Pan American Institute of Geography and History, the Inter-American Statistical Institute, the Inter-American Centre for Tax Administrators, the Centre for Latin American Monetary Studies and the Postal Union of the Americas and Spain and has joined the Pan American Health Organization, the Inter-American Institute of Agricultural Sciences and the Inter-American Development Bank.

The most significant Canadian commitment to the development of this region was Canada's accession to full membership in the Inter-American Development Bank in 1972. Canada has subscribed US\$242 million to the Bank's ordinary capital fund, \$40 million of it paid in and \$202 million callable. Canada is also contributing US\$60 million to the Bank's Fund for Special Operations, making a total cash contribution of US\$100 million payable over an initial period of three years. Prior to Canadian membership, the Bank had administered Canadian loans totalling \$74 million for Latin American development over a period of eight years.

Bilateral relations were also intensified with countries in the area. The Canadian program of bilateral development assistance to Latin American countries increased substantially to \$14.4 million in 1973, with \$20 million earmarked for 1974-75. Those countries which most need and can most effectively use Canadian technical assistance are receiving a major part of available resources through sustained programs. Other countries in the region are eligible to receive assistance on an ad hoc project-by-project basis; in 1972 both Cuba and Haiti were included in this group. To concentrate Canadian assistance within those sectors where Canadian technical expertise is most applicable to the region's needs, emphasis has been given to projects in the fields of education, agriculture, fisheries, forestry and public administration. Aid funds are also available through Canadian non-governmental organizations engaged in developmental and humanitarian work in Latin America, and through disaster-relief organizations.

Bilateral relations were also intensified with countries in the area. The Canadian program of bilateral development assistance to Latin American countries increased substantially to \$14.4 million in 1973, with \$20 million earmarked for 1974-75. Those countries which most need and can most effectively use Canadian technical assistance are receiving a major part of available resources through sustained programs. Other countries in the region are eligible to growing importance as a supplier of oil to Canada. Following the coup d'état in Chile special provisions were made to set up an immigration program for refugees and others affected by the events. Closer consultation and liaison with Latin American countries have been cultivated on a widening range of questions of mutual interest such as the law of the sea, environmental improvement, narcotics control, anti-hijacking measures, emergency relief and disarmament.

Canada's trade and economic relations with Latin American countries expanded in 1973. Available statistics show an increase in Canadian exports to \$635 million and imports to \$889 million from their 1972 levels of \$613 million and \$660 million, respectively. This represents an increase of 3.7% in Canada's exports and 34.6% in imports. Approximately three quarters of Canada's exports to Latin America consisted of semi- and fully-manufactured goods. The bulk of Canadian imports from this area consisted of crude or raw materials, in particular oil from Venezuela. The use of long-term financial facilities, extended by the Export Development Corporation, has promoted Canadian exports to Latin America and indirectly assisted Latin American economic development.

3.6.2.10 Canada and Europe, the Middle East, Africa, and the Far East

Canada and Europe. Canada's relations with Western Europe have developed steadily under the impulse of major Canadian interests in the area. These countries have long been major trading partners for Canada and as a result of its growing prosperity and unity, Western Europe

is likely to assume even greater importance. This country maintains close bilateral relations with Britain and France in particular, as well as with most other Western European countries, and has resident diplomatic missions in almost all of them. Canada is also, along with a number of Western European countries, an active member of NATO, OECD and wider international associations such as GATT and the Economic Commission for Europe of the United Nations. In view of the increasing economic and political importance that the Common Market is assuming for Canada, the Canadian government has been discussing with European Economic Community (EEC) member countries means of strengthening its economic relations through co-operation with the EEC in the field of industrial development.

Canada has a substantial interest in developing better relations with Eastern Europe. Increased trade, scientific and technological co-operation and cultural exchanges, and a strengthening détente in Europe have all been factors in this new situation. The Conference on Security and Co-operation in Europe, which opened in Helsinki in July 1973 and in which Canada has taken an active part, should be an important step in developing détente through increased exchanges and contacts.

A new era in Canadian-Soviet relations, based on a more candid and friendly atmosphere and on the principle of mutual benefit, was opened in 1971 with the Protocol on Consultations, the Agreement on Co-operation in the Industrial Application of Science and Technology, and the General Exchanges Agreement, which provide for regular and long-term co-operation between Canada and the USSR. At the same time, Canada has been pursuing improved and mutually beneficial relations with the other Eastern European countries. At present, Canada has resident diplomatic missions in Moscow, Prague, Warsaw, Belgrade, and Budapest and maintains diplomatic relations with Romania and Bulgaria through non-resident ambassadors.

Canada and the Middle East. The renewal of full-scale hostilities in the Middle East in October 1973 brought to an end the uneasy truce which had prevailed in that region since 1967. The Secretary of State for External Affairs said that Canada was prepared to participate in a new peacekeeping effort if it would open the way for a negotiated settlement on the basis of a United Nations Security Council resolution. On October 22, the Security Council approved a resolution co-sponsored by the US and the USSR, calling for a ceasefire and the commencement of negotiations leading to a just and lasting settlement. On October 25 the Security Council authorized the formation of a UN peacekeeping force. The Canadian Parliament subsequently approved the Secretary-General's request that Canada provide the logistic component of the force. About 1,000 Canadians took up duties along the ceasefire line between Egyptian and Israeli forces, and, later, in the disengagement zone negotiated between the two countries. Following the disengagement of the Syrian/Israeli front about 150 of these troops were re-assigned to the UN Disengagement Observer Force stationed on the Golan Heights.

Prior to the war Canada had actively campaigned to increase her representation in the Middle East. Diplomatic relations were opened with Saudi Arabia in May 1973. It was also decided to establish full diplomatic relations with the countries of the Persian Gulf, and with the Yemen Arab Republic and the People's Democratic Republic of Yemen. Canada now has diplomatic relations with every Middle Eastern country.

Both Canadian exports to and imports from most Middle East countries rose significantly during 1973 and the first half of 1974 and prospects are excellent for continued rapid growth. A Canadian trade delegation led by the Minister of Industry, Trade and Commerce visited Lebanon, Saudi Arabia, Iraq and Iran in the spring of 1974. The Minister of Energy, Mines and Resources also visited the region early in 1974.

In August 1974, HRH King Hussein of Jordan visited Canada and held talks with the Prime Minister and the Secretary of State for External Affairs.

Canada continued to give substantial support to the work of the United Nations Relief and Works Agency (UNRWA) in Palestine. The Canadian contribution was increased by \$500,000 in 1973, bringing our total annual contribution to \$2.05 million and making Canada the third largest contributor to this organization.

Canada and Africa. Direct relations were first established with former British colonies in Africa as they became independent members of the Commonwealth. Increasing contacts and diplomatic relations with the newly independent French-speaking African states soon followed as a result of the increasing emphasis the Canadian government placed on French culture in

this country as well as the important role played by francophone African countries in their continental affairs. Canada now maintains diplomatic relations with almost all the independent African states and through resident Canadian missions in 15 countries. The development of bilateral diplomatic and commercial relations has been accompanied by a significant and growing program of Canadian aid to Africa. This program directed more than \$113 million in aid to the African continent in 1972-73, and will contribute \$131 million in 1973-74.

Canada and the Asian and Pacific Region. For many years Canada has had important links with a number of countries in Asia. During the past decade Canadians have become increasingly aware of their position as a Pacific as well as an Atlantic nation. With the development of modern transportation and communications, the Pacific Ocean has ceased to be a barrier and, because of the expanding interest in Asia and its importance, contacts between Canadians and the peoples of Asia and the Pacific are growing rapidly in number and variety. At the present time Canada has diplomatic relations with 24 countries in the Asian and Pacific region and has resident diplomatic missions in 15 countries.

Although some of these contacts have developed as a result of historic and traditional ties, as in the case of Australia and New Zealand, many new contacts have been economic in character. Trade has increased and assistance for development has been provided. The importance of Asia as a trading area is evident from the emergence of Japan by 1973 as Canada's second largest bilateral trading partner, ahead of Britain and after the US, with trade in 1973 amounting to more than \$2.8 billion. The potential for further trade in the region has also been recognized by trade fairs in the People's Republic of China (the most recent being a solo electronics fair in Shanghai in 1974), by the conclusion of a trade agreement with that country in October 1973, by agreements on bilateral trading preferences with New Zealand and Australia in 1973, and through economic consultations with India in November 1973 which grew out of Prime Minister Gandhi's visit to Canada in June of that year. An increasing number of Canadian trade missions, both official and private, also visit the area.

Canada's general policy of diversification of its international relationships is reflected in the growing number of meetings between Canadian Ministers and officials and their counterparts in the region. Canada's interest in co-operation and development is promoted through participation in the Colombo Plan, membership in the Asian Development Bank and Canada's official observer status with the UN Economic Commission for Asia and the Pacific. A significant proportion of Canada's total development assistance is provided to the developing countries of this region. India has always been the largest recipient of such aid, although this long-standing relationship came under severe strain after India exploded a nuclear device in May 1974.

For more than a quarter-century parts of Asia have been a focus of tension and conflict. Canada has participated in various UN efforts to restore or maintain peace in South Asia, Korea and Indonesia. Beginning in 1954, Canada was a member of the International Commissions for Supervision and Control (ICSC) in Cambodia, Laos and Vietnam. This came to an end in Cambodia at the end of 1969 with the adjournment of the Cambodia Commission, and in Vietnam with the adjournment of the Vietnam ICSC in early 1973 followed by Canada's withdrawal, after six months' participation, from the present International Commission of Control and Supervision in Vietnam on July 31, 1973. In Laos, it ended for all practical purposes with the withdrawal from Vientiane on June 15, 1974 of the Canadian Delegation to the Laos ICSC which was established by the Geneva agreement of 1962. Canada, however, despite its disengagement from truce supervisory roles in Indochina, continues to take an active diplomatic interest in the area and remains ready to contribute to economic rehabilitation when peace comes to the area.

Canada and the Asian Development Bank. Canada is a member of the Asian Development Bank, established in 1966 with Articles of Agreement patterned broadly after those of the World Bank and other international financial institutions. The Bank's subscribed capital stock is US(1966)\$1,005.4 million of which one half was paid in over the five-year period 1966-70. The balance of member-country subscriptions remains as a callable guarantee against which the Bank may sell its bonds on world capital markets. Asian regional countries, including Japan, Australia and New Zealand, have subscribed US\$625.4 million and non-regional countries have subscribed the remaining US\$380 million. Canada has paid US\$12.5 million to cover the paid-in portion of its original subscription of US\$25 million. The Bank approved a

150% increase in authorized capital stock in November 1972 of which Canada's share will be US\$37.5 million with 20% the paid-in portion.

For its ordinary operations which are financed from paid-in equity capital or any resources raised on world capital markets, the Bank expects to follow a pattern similar to that of the World Bank lending at rates of interest sufficient to maintain its own capacity to borrow.

The Bank has recently established an Asian Development Fund which provides development assistance to developing member countries on concessional terms. Canada's contribution to the new Fund will be US\$10 million.

3.6.2.11 Canada and the OECD

The Organization for Economic Co-operation and Development (OECD) was established in September 1961, as successor to the Organization for European Economic Co-operation (OEEC) founded in 1948 by the countries of Western Europe to facilitate reconstruction of their war-shattered economies. With the OECD's establishment, Canada and the United States and later Japan (May 1964), Australia (June 1971) and New Zealand (May 1973) joined with the countries of Western Europe to form what is today a major, intergovernmental forum for consultation and co-operation among the advanced industrialized nations in virtually every major field of economic activity. At present 24 countries are full members of the Organization, while Yugoslavia has a special status entitling it to participate in certain activities. The Organization's headquarters is in Paris.

The aim of the OECD is to facilitate the formulation of policy approaches which are conducive to balanced economic growth and social progress of both member and non-member countries. The Organization provides an instrument for assembling and examining knowledge relevant to policy-making and also a forum, meeting the year round, for the exchange and analysis of ideas and experiences from all member countries.

The Organization plays a significant role in harmonizing international economic and financial policy and is the main area where industrialized nations may hold consultations on questions of development assistance. The original focus of the OECD on more traditional economic, trade and development matters has altered and new activities have been undertaken in the areas of agriculture, the environment, industry, science and technology, foreign investment and manpower policy. This broader orientation places increasing emphasis on the qualitative, as well as the quantitative, aspects of economic growth and is most recently seen in the Organization's work on the problems of environment and welfare in the context of economic policy. At the first Ministerial Council in 1961, member countries approved a growth target of 50% for the decade to 1970; that goal was considerably exceeded.

The OECD brings together government officials, representatives of private business, labour unions, universities and other non-governmental bodies in both deliberative and consultative capacities, at the international level. Within Canada, the Canadian Business and Industry Advisory Committee, comprising representatives of the Canadian Chamber of Commerce, the Canadian Council of the International Chamber of Commerce and the Canadian Manufacturers' Association was established in 1962 to ensure input from the business community. Arrangements also exist for consultation with Canadian labour organizations, universities and other non-governmental bodies. Representatives of provincial governments frequently attend OECD meetings when subjects of particular interest to the provinces are being discussed.

3.6.2.12 Canadian development assistance programs

The Canadian International Development Agency (CIDA) is responsible for the operation and administration of Canada's international development assistance programs. In 1973-74 Canada allocated \$565.03 million for foreign aid, an increase of \$74.04 million over the previous year. Of that amount \$152.35 million was allocated to multilateral assistance programs and \$346.54 million to bilateral assistance programs. The remaining funds were divided among non-governmental organizations working in the field of international development, international emergency relief programs, the International Development Research Centre, incentives to Canadian private investment in developing countries and the CIDA scholarship fund for Canadians taking postgraduate degrees in international development and related fields.

CIDA's multilateral assistance programs are directed toward the United Nations and its affiliated organizations, the World Bank Group, the regional development banks and several

regional institutions. Among the many UN organizations which Canada supported in 1973 were the United Nations Development Program (UNDP) and the World Food Programme (WFP). During 1973 Canada gave \$20.3 million to the UNDP, the world's largest pre-investment and technical assistance organization. The UNDP has an estimated program budget of \$290 million. The WFP has had 603 projects in 88 countries at a total cost of nearly \$1.4 billion since its inception in 1963. In 1973 Canada contributed \$17 million to the Program in cash and commodities.

As its sixth largest contributor, Canada has continued to play an important role in the World Bank Group, consisting of the International Bank for Reconstruction and Development, the International Development Association (IDA) and the International Finance Corporation. Negotiations for a fourth replenishment of funds for IDA, the agency responsible for the Bank's lending program to under-developed countries, were completed in 1973. Canada agreed to contribute \$276 million in four instalments beginning in the 1974-75 fiscal year.

Canada also continued its support for the four regional development banks — the Asian Development Bank, the Caribbean Development Bank, the African Development Bank and the Inter-American Development Bank — during 1973. There were two major developments in this area in 1973. One was the approval in principle of an Asian Development Fund by the Board of Governors of the Asian Development Bank. The other was a \$5-million interest-free loan to the African Development Bank. This loan marks the first time Canada has supported a development bank other than by capital stock in the bank or by contributions to a special fund.

CIDA's bilateral development program is divided into three types of aid — technical assistance, economic assistance and international food aid — and into five regional programs. During 1973, 2,245 students and trainees from developing countries studied in Canada under CIDA's technical assistance program and 1,389 Canadian advisers and educators worked overseas. Under a unique feature of Canada's technical training program some 412 students and trainees studied in developing countries other than their own.

Canadian bilateral economic assistance is divided almost evenly between grants and loans. Most loans are extended for 50 years and are interest free, with no repayment required for the first 10 years.

The allocation for bilateral food programs was \$68 million in 1973-74; this is approximately 18% of the total allocation for bilateral programs although it does not cover all CIDA food aid. Some, such as emergency food relief, is handled multilaterally by UN agencies.

Canada's role in the Colombo Plan, a program initiated by Commonwealth governments in 1951 (and subsequently joined by other governments) to administer aid to South and Southeast Asia, is the largest and oldest of the regional bilateral aid programs administered by CIDA. It was allocated \$153.4 million in 1972-73 and \$160 million in 1973-74. However, because of the size of the Asian population it has much less impact than aid from Canada has in such areas as the Caribbean or parts of Africa.

Since 1951 Canada has provided more than \$1,826 million in bilateral aid, most of it directed to Bangladesh, India, Indonesia, Pakistan and Sri Lanka. In recent years Canada's program in this area has changed considerably. Capital assistance, in the form of loans and grants, is now provided for specific economic sectors given priority by the recipient countries in fields such as communications, transportation, electric power development, agriculture, fisheries, mining, lumbering, medicine and public health.

CIDA's programs in francophone Africa, which includes the eight least developed nations of the world, were initially concentrated on technical assistance projects particularly in education and health. Since 1970, however, Canada has broadened the scope of its assistance and increased its support in the area from \$29.7 million to \$59.1 million. Canada has become increasingly involved in the economic development of the region through projects that combine capital and technical assistance, and which accord with the priorities of the countries concerned.

Development in the Sahelian or sub-Saharan Zone of francophone Africa has been retarded because of a severe drought in the region during the last five years. CIDA contributed \$10 million in food, cash, air transportation and other goods and emergency services in 1973 to the six countries most seriously affected.

The Special Commonwealth Africa Assistance Plan resulted from discussions at the 1960 Commonwealth Prime Ministers' meeting. Canadian assistance to Commonwealth Africa has grown from an initial provision for technical and educational assistance to include a variety of

capital projects and pre-investment surveys. Undertakings in the fields of energy, transportation, communications, agriculture and economic planning in eastern and southern Africa have balanced an original focus on west Africa. Between 1960 and March 1974, Canada contributed \$364 million to bilateral development programs in the region. In 1973-74 the allocation for Commonwealth Africa was \$50.15 million, for projects ranging from mining to beekeeping.

Canadian economic and technical assistance to the Commonwealth Caribbean began in 1958. Since then the region has received more Canadian aid per capita than any other area of the world. Canada's bilateral allocations, amounting to more than \$183 million since 1964 including \$18.4 million in 1973-74, have contributed to construction projects, transportation surveys, water systems, medical assistance, support for the University of the West Indies and other projects.

In 1971 CIDA launched a program of bilateral technical assistance concentrating on Latin American agriculture, forestry, fisheries, education and community development. Because the program is new, allocations decreased from \$10.5 million in 1970-71 to \$7 million in 1973-74, but disbursements tripled over the same period.

CIDA is also involved with non-governmental aid organizations and business and industry. In the 1968-69 fiscal year \$5 million was allocated to help voluntary agencies increase their contribution to international development. This figure had risen to \$16 million by 1973-74. It has been estimated that the total value of private assistance to developing nations from Canadian organizations is about \$50 million annually.

CIDA has become involved in the private sector of developing countries' economies and expanding suitable Canadian enterprises overseas. The organization works with Canadian business, the Department of Industry, Trade and Commerce, international finance corporations, development banks, and overseas corporations to identify and help finance worthwhile investment opportunities in all types of secondary industry in the developing world.

The Commonwealth Scholarship and Fellowship Plan was established in 1958 to give promising Commonwealth students the opportunity to study in other member countries. Britain provides half of the annual scholarships and Canada one quarter. Since 1969 the Association of Universities and Colleges of Canada has administered the Plan and CIDA has provided the funds. In January 1974, 252 students were on scholarships and expenditures were about \$1.8 million.

In 1965 Canada introduced research and visiting fellowships as part of the Canadian contribution to the Plan. Professors from other Commonwealth countries are invited to visit Canadian universities and educational institutions to carry out research in their field.

Commonwealth Fund for Technical Cooperation. Established in April 1971 following a Commonwealth Prime Ministers' Conference and administered by the Commonwealth Secretariat, the Commonwealth Fund for Technical Cooperation provides Commonwealth countries with multilateral assistance in the form of advisory services in economic planning and related fields. Canadian contributions to the Fund reached \$1 million in 1973-74.

The International Development Research Centre is an international organization supported financially by Canada. Established in 1970 to initiate and encourage research focused on the problems of the world's developing regions, it fosters co-operation between the developed and the developing world. In its role as co-ordinator of international development research, the Centre enlists the talents of natural and social scientists and technologists from Canada and other countries. It also assists developing regions to build up the research capabilities, innovative skills and institutions required to solve their own problems. The Centre also offers research grants to PhD candidates and other qualified applicants who are Canadian citizens or residents with three years landed-immigrant status.

Operations of the Centre are conducted under four program divisions: Agriculture, Food and Nutrition Sciences; Information Sciences; Population and Health Sciences; and Social Sciences and Human Resources. As at December 31, 1973 the Centre had approved 190 projects worth \$23.2 million involving 142 grantees in 75 countries. Most of the research activities and related seminars were conducted in developing countries by their research organizations.

The Canadian government gave the Centre \$2.4 million in 1970-71, \$2.5 million in 1971-72, \$8 million in 1972-73 and \$14 million in 1973-74.

3.7 Defence

3.7.1 The Department of National Defence

The Department of National Defence was created by the National Defence Act, 1922, which established one civil department of government in place of the previous Departments of Militia and Defence, Naval Service and the Air Board. The Department now operates under authority of RSC 1970, c.N-4.

The Minister of National Defence has the control and management of the Canadian Forces, the Defence Research Board and all matters relating to national defence establishments. He is responsible for presenting to Cabinet matters of major defence policy for which Cabinet direction is required. He is also responsible for the National Emergency Planning Establishment which replaced the Emergency Measures Organization on April 1, 1974. The Minister continues to be responsible for certain civil emergency powers, duties and functions as outlined in Order in Council PC 1965-1041 dated June 8, 1965, as amended.

The Deputy Minister is the senior public servant in the Department and the principal civilian adviser to the Minister on all Departmental affairs. He is responsible for ensuring that all policy direction from the government is reflected in the administration of the Department and in military plans and operations.

The Chief of the Defence Staff is the senior military adviser to the Minister and is charged with the control and administration of the Canadian Forces. He is responsible for the effective conduct of military operations and the readiness of the Canadian Forces to meet the commitments assigned to the Department by the government.

The Defence Research Board is responsible for advising the Minister of National Defence on scientific matters relating to defence and for evaluating the contribution of science and technology to defence.

Within National Defence Headquarters, the Deputy Minister and the Chief of the Defence Staff have reporting to them the Vice Chief of the Defence Staff, four assistant deputy ministers and the Judge Advocate General, Director General Information and Director General Departmental Administrative Services.

The Vice Chief of the Defence Staff is the principal assistant and adviser to the Deputy Minister and the Chief of the Defence Staff. He acts for the Chief of the Defence Staff in his absence. The Deputy Chief of the Defence Staff is responsible to the Vice Chief of the Defence Staff for the effective and efficient performance of the operations of the Canadian Forces.

The Defence Council meets as required to provide a channel of communication between the Minister and the senior officials of the Department through briefings, the exchange of views on policy matters, and discussions of specific matters requiring the approval, decision and/or direction of the Minister.

The Defence Management Committee considers all major and significant matters of policy, plans, programs and administration requiring the decision and direction of the Deputy Minister and/or the Chief of the Defence Staff prior to their submission to the Minister as required.

The Minister of National Defence is responsible for administering the following laws which relate to the Department of National Defence: National Defence Act (RSC 1970, c.N-4), Defence Services Pension Continuation Act (RSC 1970, c.D-3), Canadian Forces Superannuation Act (RSC 1970, c.C-9) and Visiting Forces Act (RSC 1970, c.V-6).

Liaison in other countries. The Chief of the Defence Staff, who is the Canadian Military Representative to the North Atlantic Treaty Organization, is responsible for advice on all NATO military matters and acts as a military adviser to the government and to Canadian delegations to NATO. For purposes of liaison and international co-operation in defence, Canada also maintains: the Canadian Defence Liaison Staff London, representing the Canadian Armed Forces and the Defence Research Board in Britain, the Commander of which is the principal military adviser to the Canadian High Commission in London; the Canadian Defence Liaison Staff Washington, representing the Canadian Armed Forces and the Defence Research Board in the United States, the Commander of which is the principal military adviser to the Canadian Ambassador in Washington, and is the Canadian National Liaison Representative to the Supreme Commander, Allied Command Atlantic (SACLANT) Headquarters; two logistic liaison units also located in the United States; in Brussels, a Canadian member of the

NATO Military Committee in Permanent Session, a Military Adviser to the Canadian Permanent Representative to the North Atlantic Council and also a Canadian National Military Representative to Supreme Headquarters Allied Powers Europe (SHAPE); and Canadian Forces Attachés in various countries throughout the world. In addition, a number of defence matters of concern to both Canada and the United States are considered by the Permanent Joint Board on Defence, which provides advice on such matters to the respective governments.

3.7.2 The command structure of the Canadian Forces

The Canadian Forces are organized on a functional basis to reflect the major commitments assigned by the government. All forces devoted to a primary mission are grouped under a single commander who is assigned sufficient resources to discharge his responsibilities. Specifically, the Canadian Forces are formed into National Defence Headquarters and seven major Commands reporting to the Chief of the Defence Staff.

Mobile Command. The role of Mobile Command is: to provide military units, including tactical air support, suitably trained and equipped, for the protection of Canadian territory; to maintain operational readiness of combat formations in Canada required for overseas commitments; and to support United Nations or other peacekeeping operations.

The forces assigned include: three airportable combat groups in Canada; the Canadian Airborne Regiment; the Canadian Contingent of the United Nations Force in Cyprus; Canadian Contingent of the United Nations Middle East; two tactical fighter squadrons; four tactical helicopter squadrons and one helicopter operational training squadron; one transport helicopter squadron; and one combat training centre.

The Militia and Air Reserve components are also controlled and administered by Mobile Command.

The Militia. The Militia is assigned its traditional role as a sub-component in support of the Regular Force. Under the present organization, units of the Militia have been placed under either the Commander, Mobile Command or Canadian Forces Communication Command.

Mobile Command exercises command and control of 121 Militia combat and service units through five Militia Area Headquarters and 21 Militia Districts in the following centres: Esquimalt, Vancouver and Victoria; Edmonton, Southern Alberta, Saskatchewan and Winnipeg; Hamilton, London, North Bay, Ottawa, Toronto and Windsor; Montreal and Quebec; and West Nova Scotia, Cape Breton, West New Brunswick, East New Brunswick, Prince Edward Island and Newfoundland. Mobile Command Militia is charged with: providing trained individuals for augmentation and reinforcement of the Regular Force; providing trained sub-units to support the field force for the defence of Canada and the maintenance of internal security; providing trained personnel for the augmentation of the civil emergency operations organization; and forming the base on which the Regular Force could be expanded in the event of an emergency.

The 12 Canadian Forces Communication Command Militia Units are commanded and controlled through the five Regular Force Communication Groups and are centred in: Vancouver, Edmonton and Calgary; Regina and Winnipeg; Toronto and Ottawa; Montreal and Quebec; and Saint John, Halifax and Charlottetown. Their tasks collectively include: the augmentation of Canadian Forces Communication Command in an emergency; the provision of communications support to Mobile Command Militia in emergency operations (peace); the provision of instructors for the training of Mobile Command unit signalers; and the provision of communications support for control of Mobile Command Militia tactical exercises.

Air Reserves. The Air Reserve is organized into four Air Reserve Wing Headquarters at Montreal, Toronto, Winnipeg, and Edmonton and six flying squadrons of six DHC Otter aircraft each. Air Reserve Squadrons are located at Montreal (two), Toronto (two), Winnipeg (one) and Edmonton (one). The Air Reserve is required to provide light tactical air transport support to the Regular Force and in particular to Mobile Command ground forces. Air Reserve tasks include logistic airlift, air evacuation of patients, aerial surveillance and photography, and communications and liaison.

Maritime Command. All Canadian Maritime Forces, both sea and air, are under the command of the Commander, Maritime Command whose Headquarters is in Halifax. The Deputy Commander is the Commander, Maritime Forces Pacific with Headquarters in Esquimalt. The

role of Maritime Command is to defend Canadian interests from assault by sea and to support measures to protect Canadian sovereignty. Support is provided to NATO by assisting in conducting anti-submarine warfare in the Allied Command, Atlantic. The Commander, Maritime Command is the NATO Commander of the Canadian Atlantic Sub-Area of the Western Atlantic Command, under the Supreme Commander, Allied Command Atlantic (SACLANT). Additional roles are to support Canadian military operations as required and to conduct search and rescue operations within the Atlantic and Pacific Search and Rescue Areas (roughly the Atlantic Provinces and British Columbia).

As at December 1973, the following vessels were in service in Maritime Command: 20 Destroyer Escorts/Destroyer Escorts Helicopter Equipped including four new Iroquois Class Helicopter Destroyers; three Operational Support Ships; three Oberon Class Submarines; one Tench Class Submarine; six Bay Class Coastal Patrol Vessels (employed as training vessels); and two Escort Repair Vessels (retained in service as alongside workshops and temporary accommodation vessels).

The Naval Reserve is an essential component of Maritime Command and has been designated a ready reserve. Its primary function is to provide trained personnel to augment the fleet in emergencies. Another essential role is to provide and maintain naval control of shipping and protection of fishing vessels capability in time of emergency or war to meet national and NATO requirements. There are 16 naval reserve units situated in major Canadian cities.

Air Defence Command participates with the United States in the air defence of North America, through NORAD. It has command of three interceptor squadrons, one SAGE control centre, one BUIC centre and two transcontinental radar lines. Operational control of NORAD assigned forces is exercised by HQ NORAD.

Air Transport Command. The main role of Air Transport Command (ATC) is to maintain an operationally effective air transport force to meet Canada's defence commitments. In addition to this main role, ATC is responsible for functional and administrative control of all primary search and rescue (SAR) units in Canada as well as the operational control of SAR activities in the Eastern Search and Rescue Area. It has four squadrons operating medium- and long-range cargo and troop carrying aircraft as well as four transport and rescue squadrons.

Air Transport Command provides the airlift needed to meet national and international emergencies that require military participation. It also provides search and rescue services for aircraft to meet Canada's obligations under the terms of membership in the International Civil Aviation Organization, and it co-ordinates marine search and rescue operations within Canada's areas of responsibility.

In 1973 strategic and tactical airlift by Command aircraft enabled other elements of the forces to participate in a wide range of national and international responsibilities embracing national sovereignty and development, North American defence, NATO, humanitarian missions and contributions to world peace and security.

About half of the Command's flying is devoted to joint exercises with Mobile Command and other Canadian Forces Commands, often in conjunction with NATO allies. The remainder is used to support Canadian Forces Europe, isolated bases in northern Canada, Canadian military and civil missions abroad, and DND and other government agencies in Canada. These operations and exercises provide the experience the Command needs to maintain readiness for its emergency tasks. During 1973, a total of 408.4 million passenger-miles and 59.4 million cargo ton-miles were flown.

Training Command plans and conducts all recruit and individual trades and classification training that is common to more than one command. The Command is also responsible for the Prairie Region, one of the six military regions into which Canada is divided. The Command headquarters is in Winnipeg and the nine bases within the Command are located in seven provinces. A total of 24,239 students attended one or more of 1,258 courses conducted by the Command during 1973.

The Canadian Forces Communication Command (CFCC) manages, operates and maintains strategic communications for the Canadian Forces and, in emergencies, for the federal and provincial governments. The Command also provides points for interconnecting strategic and tactical networks. CFCC manages, operates and maintains the major DND automatic data processing centres.

Canadian Forces Europe. The Canadian Forces allocated to support NATO in Europe consist of land and air elements. The land element is No. 4 Canadian Mechanized Brigade Group operationally responsible to the Central Army Group. The air element, No. 1 Canadian Air Group, consisting of three CF-104 Starfighter squadrons, is operationally assigned to No. 4 Allied Tactical Air Force. These elements are located in the Baden-Baden area of the Federal Republic of Germany and are supported administratively by CFB Europe at Lahr.

Administration of military bases in Canada. Staffs and services required below Command Headquarters level to administer and support units based in a particular locality have been organized on Canadian Forces bases. The primary role of each base is to provide base-level administration and supporting services to those units located on or near the base. Each base has been allocated to a functional Commander, to whom the base Commander reports.

Function/regional organization. Functional Commanders have been assigned a regional as well as a functional responsibility for such actions as representation to provincial governments, aid of the Civil Power, emergency and survival operations, and administration of cadets, as well as regional support services for all units in the region.

Canada has been divided into six regions, five of which have been assigned to functional Commanders as follows: Atlantic (Newfoundland, Nova Scotia, Prince Edward Island, New Brunswick) — Maritime Command; Eastern (Quebec) — Mobile Command; Central (Ontario) — Air Transport Command; Prairie (Manitoba, Saskatchewan, Alberta) — Training Command; and Pacific (British Columbia) — Maritime Forces Pacific. One region, comprising the Yukon Territory and Northwest Territories, has been assigned to Commander Northern Region with Headquarters in Yellowknife, NWT who also exercises a co-ordinating function for all military activities in the region.

3.7.3 Operations in 1973

Maritime air, surface and sub-surface forces participated in NATO exercises in the North Atlantic and in combined exercises with forces from New Zealand, Australia, Britain and the United States on both the Pacific and Atlantic coasts. Training exercises were conducted in the Bermuda, Caribbean and Southern California areas to maintain the Maritime Forces at an operational level. In addition, an exercise was held in the Arctic to assess capabilities in northern waters. One destroyer was assigned to the NATO Standing Naval Force Atlantic.

Argus aircraft from both east and west coast squadrons maintained daily long-range patrols and surveillance of ocean areas adjacent to the Canadian coastline and in the Arctic; many hours were also flown on search and rescue missions. Shore-based Tracker aircraft flew similar missions, concentrating on coastal patrols, fisheries protection and pollution prevention. Between exercises, ships made goodwill visits to many nations. Argus crews conducted exchange visits with United States, Britain and France.

In fulfilment of obligations under NATO, Canada continued to provide ground and air forces for the defence of Western Europe.

To exercise Canadian sovereignty and to familiarize troops with the problems of living, moving and fighting in the North, exercise New Viking continued to be Mobile Command's most important northern exercise. From advanced bases in Churchill and Resolute Bay forces were deployed to forward patrol bases in all parts of the Canadian archipelago.

In addition, the Canadian Airborne Regiment, the Command's quick reaction force for both defence of Canada and international peacekeeping operations, exercised in the Arctic and trained in California in October.

The Canadian Forces continued to provide support for United Nations operations. Canadian participation in the UN forces in Cyprus included provision of a reduced Infantry Battalion, a Canadian Contingent Headquarters and a Canadian element in the UN headquarters — a total of 589 officers and men. There were also 39 officers and men employed on other UN missions in the Middle East, Kashmir and Korea. In October Canada agreed to contribute forces to the United Nations Emergency Force (Middle East). Between November 4, 1973 and January 15, 1974, over 1,100 men, with communication, supply, and other equipment, were deployed to Egypt. The force includes a Signals Unit, a Service Unit, an Air Unit of two Buffalo Aircraft, a base support unit and personnel on the staff of the United Nations Headquarters in Cairo.

In January 1973 Canada deployed 250 members of the forces to Vietnam to participate in

the International Commission for Control and Supervision. The Canadian contribution was dependent upon conditions of effectiveness and control which were not met; accordingly the Canadian contingent was withdrawn in July 1973.

3.7.4 Training

All recruit and most basic and advanced trades training in support of the Canadian Armed Forces takes place at various schools under the supervision of Training Command. Maritime Command and Mobile Command maintain functional control of trades and operational training for their personnel.

The Combat Arms School of the Combat Training Centre, CFB Gagetown, NB, conducts training for officers and men of the armoured artillery and infantry units of the Regular and Reserve Forces, ranging from basic trades to advanced courses. Similar courses for French-speaking personnel are given at the Combat Arms School Detachment, CFB Valcartier, Que. Training for field engineers and construction trades is given at CFB Chilliwack, BC.

Recruit training takes place at CFB Cornwallis, NS, for English-speaking recruits and at CFB Saint-Jean, Que., for French-speaking recruits. Basic technical training in French is given also at CFB Saint-Jean, Que. and an expanding trades-training program in that language is given at most bases and schools.

Saint-Jean is also the site of the English-French Language School, although the official languages are taught on a limited scale at selected Canadian Forces Bases, and in civilian centres under the auspices of the Public Service Commission. Training in other languages is given at the Canadian Forces Foreign Language School in Vanier, Ont.

Support trades training is conducted at the School of Administration and Logistics, CFB Borden, Ont. Electronics training is conducted at the School of Communications and Electronic Engineering at CFB Kingston, Ont., and aerospace training at the School of Aerospace and Ordnance Engineering at CFB Borden. Training for various other technical specialties is conducted at a number of bases across Canada. Two Fleet Schools, one at CFB Esquimalt, BC and the other at CFB Halifax, NS, provide basic and advanced Maritime trades training and have training facilities for the operational warships on the east and west coasts.

Flying training to "wings" standard is based in the Prairie Provinces — pilot selection and basic helicopter flying training at Portage la Prairie, Man., basic fixed-wing flying training at Moose Jaw, Sask., and advanced flying training at CFB Cold Lake, Alta. Air Navigator and Observer training is conducted at the Air Navigation School at CFB Winnipeg, Man. The operational Commands maintain operational flying training units and technical training units to give training on handling equipment to tradesmen and specialist officers in these Commands.

Canadian Military Colleges. The three Canadian Military Colleges are the Royal Military College of Canada, founded at Kingston, Ont., in 1876; Royal Roads Military College, established in 1941 near Victoria, BC; and Collège militaire royal de Saint-Jean, established at Saint-Jean, Que., in 1952, primarily to meet the needs of French-speaking officer cadets. In 1959 the Ontario Legislature granted the Royal Military College a charter empowering it to grant degrees. In 1972 the Department of National Defence concluded an agreement which permits graduates of Collège militaire royal de Saint-Jean to be granted Université de Sherbrooke degrees. In 1967, the Canadian Services Colleges, as they were then known, were re-designated the Canadian Military Colleges.

The role of the Colleges is to educate and train officer cadets and commissioned officers for a career in the Canadian Forces. Courses are designed to develop character and to provide a balanced liberal, scientific and military education leading to degrees in arts, science and engineering. The Royal Military College of Canada accepts senior matriculants and offers a four-year course. Royal Roads Military College accepts senior matriculants who, on successful completion of the second year, go to Collège militaire royal de Saint-Jean or to the Royal Military College of Canada for their third and fourth years. Collège militaire royal de Saint-Jean accepts junior and senior matriculants to pursue a five- or four-year program; the final two years in some disciplines are completed at the Royal Military College.

During the 1973-74 academic year 1,342 full-time students were enrolled at the Canadian Military Colleges, 650 of them at the Royal Military College, 453 at Collège militaire royal de Saint-Jean and 239 at Royal Roads Military College.

Staff and defence courses, Canadian Forces officer professional development system. A new four-level system of professional development courses for officers is being offered.

The Junior Staff Course, given at the Canadian Forces Staff School, Toronto, Ont., is a 10-week course conducted four times a year for junior captains selected from all officer classifications. Its aim is to prepare junior officers to perform staff functions of a general nature that are appropriate to their rank, and to provide the foundation for their subsequent professional development. The course includes studies in staff duties, the communication process, service knowledge, leadership and management, professionalism and current affairs.

The Junior Command and Staff Course (Land) is a 16-week course given twice a year at the Canadian Land Forces Command and Staff College, Kingston, Ont. This course is designed to meet the need for performance-oriented command and staff training for selected junior officers employed in land force operations.

The Command and Staff Course is a 44-week course given at the Canadian Forces Staff College, Toronto, Ont., which is intended to develop selected officers for senior command and staff appointments in the Canadian Armed Forces. In broad terms the curriculum includes military studies, executive development studies, and national and international studies. The student body normally consists of Canadian Forces majors from all classifications and a limited number of foreign officers.

The National Defence College Course, Kingston, Ont., is a 47-week course for senior military officers and civilian officials of government departments and the private sector who are due for appointments to positions of higher responsibility. It enables course members to study together, in the atmosphere of an advanced graduate school, those aspects of national and international affairs which determine or significantly affect Canada's defence and related policies. Lecturers are chosen from leaders in various fields in Canada and other countries. In addition, field study trips in Canada, the United States, Europe, Asia, Africa, Australia and Latin America familiarize students with conditions and influences which affect Canada and other countries.

Military assistance programs. Canada assists many Commonwealth and non-NATO countries by sending military training teams to those countries or by training a small number of military personnel in Canada. Training teams are sent to countries such as Ghana and Tanzania. Training in Canada is offered to developing countries such as Barbados, Cameroon, Jamaica, Kenya, Malaysia, Nigeria, Singapore and Zambia.

Canada provides training facilities for some NATO countries on a cost-recovery basis according to the provisions of the Visiting Forces and the NATO Status of Forces Agreement. Under the terms of a 10-year agreement signed in 1971 British military forces train in Canada. Training areas remain under Canadian command and control and all costs are paid by Britain.

Pilots from NATO countries have trained at Canadian defence establishments for many years. In recent years pilots from Denmark, Germany, Norway and the Netherlands have benefited from the program. Canada continues to tutor NATO pilots, with the Netherlands participating in a four-year bilateral agreement with Canada at present.

3.7.5 The cadet movement in Canada

Three civilian agencies sponsor the cadet movement in Canada. The Air Cadet League of Canada, the Army Cadet League and the Navy League of Canada promote the Royal Canadian Air Cadets, the Royal Canadian Army Cadets and the Royal Canadian Sea Cadet Corps for boys between the ages of 13 and 18. In addition the Navy League has two other organizations, the Navy League Cadets for boys ages 11 to 13 and the Wrenette Corps for girls. The Department of National Defence supports these Leagues in their objectives of developing good citizenship, leadership and physical fitness among the youth of this country. The Department provides a number of summer camps across the country, and sponsors exchange programs between provinces, and with the US, Britain, and several European countries.

3.7.6 Canada Emergency Measures Organization

The Canada Emergency Measures Organization was brought into being to initiate, stimulate and co-ordinate the civil aspects of defence policy delegated to federal departments and agencies to meet the threat of nuclear war on Canada.

In late 1973, by government direction, certain changes were made at the federal level to ensure a co-ordinated, effective and timely response to any emergency. The Canada

Emergency Measures Organization was re-named the National Emergency Planning Establishment effective April 1, 1974. The new organization will work under the direction of the Privy Council Office with its main function to be that of mitigating the effects of disasters in Canada. It will continue to have regional offices in each provincial capital to ensure continuing support for provincial authorities in the development of mutual emergency capabilities and arrangements.

Sources

- 3.1 Clerk of the Privy Council and Secretary to the Cabinet, Privy Council Office; Clerk of the Senate; Office of the Representation Commissioner; House of Commons Division, Department of Supply and Services; Office of the Chief Electoral Officer.
- 3.2.1 Secretary of the Treasury Board.
- 3.2.2 Secretary of the Treasury Board; Public Relations Division, Public Service Commission.
- 3.2.3 Canada Immigration Division, Department of Manpower and Immigration.
- 3.2.4 Citizenship Registration Branch, Department of the Secretary of State.
- 3.2.5 Communications Division, Department of Indian Affairs and Northern Development; North Group, Office of the Public Information Adviser, Department of Indian Affairs and Northern Development.
- 3.2.6 Information Services, Department of Finance; *Canada Year Book* staff.
- 3.3 Supplied by the respective provincial and territorial governments.
- 3.4.1 Privy Council Office.
- 3.4.2 Supplied by the respective provincial governments.
- 3.5 Public Finance Division, Institutional and Public Finance Statistics Branch, Statistics Canada.
- 3.6.1 Information Division, Department of External Affairs.
- 3.6.2 Information Division, Department of External Affairs; Information Division, Canadian International Development Agency; International Development Research Centre.
- 3.7 Information Division, Department of National Defence.

Tables

..	not available	e	estimate
..	not appropriate or not applicable	p	preliminary
--	nil or zero	r	revised
--	too small to be expressed		certain tables may not add due to rounding

3.1 Duration and sessions of Parliaments, 1958-74

Order of Parliament	Session	Date of opening	Date of prorogation	Days of session	Sitting days of House of Commons	Date of election, writs returnable, dissolution, and length of Parliament ^{1,2}
24th Parliament	1st	May 12, 1958	Sept. 6, 1958	117	93	Mar. 31, 1958 ^a Apr. 30, 1958 ^a Apr. 19, 1962 ^s 3 yr, 11 m, 20 d
	2nd	Jan. 15, 1959	July 18, 1959	185	127	
	3rd	Jan. 14, 1960	Aug. 10, 1960	210	146	
	4th	Nov. 17, 1960	Sept. 28, 1961	316 ^e	174	
	5th	Jan. 18, 1962	Apr. 18, 1962	91	65	
25th Parliament	1st	Sept. 27, 1962	Feb. 5, 1963 ^r	131	72	June 18, 1962 ^a July 18, 1962 ^a Feb. 6, 1963 ^s 6 m, 20 d
26th Parliament	1st	May 16, 1963	Dec. 21, 1963	220 ⁸	117	Apr. 8, 1963 ^a May 8, 1963 ^a Sept. 8, 1965 ^s 2 yr, 4 m, 1 d
	2nd	Feb. 18, 1964	Apr. 3, 1965	411 ⁹	248	
	3rd	Apr. 5, 1965	Sept. 8, 1965 ¹⁰	157 ¹¹	53	
27th Parliament	1st	Jan. 18, 1966	May 8, 1967	476 ¹²	250	Nov. 8, 1965 ^a Dec. 9, 1965 ^a Apr. 23, 1968 ^s 2 yr, 4 m, 15 d
	2nd	May 8, 1967	Apr. 23, 1968	352 ¹²	155	
28th Parliament	1st	Sept. 12, 1968	Oct. 22, 1969	386 ¹⁴	199 ¹⁵	June 25, 1968 ^a July 25, 1968 ^a Sept. 1, 1972 ^s 4 yr, 1 m, 8 d
	2nd	Oct. 23, 1969	Oct. 7, 1970	349 ¹⁶	155 ¹⁷	
	3rd	Oct. 8, 1970	Feb. 16, 1972	497 ¹⁸	244	
	4th	Feb. 17, 1972	Sept. 1, 1972	197 ¹⁹	91	
29th Parliament	1st	Jan. 4, 1973	Feb. 26, 1974	418 ²⁰	206	Oct. 30, 1972 ^a Nov. 20, 1972 ^a May 9, 1974 ^s 1 yr, 5 m, 20 d
	2nd	Feb. 27, 1974	May 8, 1974	71	50	

⁴The ordinary legal limit of duration for each Parliament is five years.

²Duration of Parliament in years, months and days. The life of a Parliament is counted from the date of return of election writs to the date of dissolution, both days inclusive (BNA Act, Sect. 50).

³Date of general election.⁴Writs returnable.⁵Dissolution of Parliament.

⁶Includes long adjournment from July 13 to Sept. 7, 1961.

⁷Government defeated in House of Commons on want of confidence motion.

⁸Includes long adjournment from Aug. 2 to Sept. 30, 1963.

⁹Includes long adjournment from Dec. 18, 1964 to Feb. 16, 1965.

¹⁰House adjourned on June 30 until Sept. 27 but dissolved on Sept. 8, 1965.

¹¹Includes long adjournment from June 30 to Sept. 27, superseded by dissolution on Sept. 8, 1965.

¹²Includes 18-day Christmas adjournment, 11-day Easter adjournment, and two long adjournments from July 14 to Aug. 29 and Sept. 9 to Oct. 5.

¹³Includes adjournment from July 7, 1967 to Sept. 25, 1967; Christmas adjournment from Dec. 21, 1967 to Jan. 22, 1968; and Easter adjournment from Mar. 27, 1968 to Apr. 23, 1968.

¹⁴Includes Christmas adjournment from Dec. 20, 1968 to Jan. 14, 1969; Easter adjournment from Apr. 2, 1969 to Apr. 14, 1969; and summer adjournment from July 25, 1969 to Oct. 22, 1969.

¹⁵Includes two days devoted to committee work.

¹⁶Includes Christmas adjournment from Dec. 19, 1969 to Jan. 12, 1970; Easter adjournment from Mar. 25, 1970 to Apr. 6, 1970; and summer adjournment from June 26, 1970 to Oct. 5, 1970.

¹⁷Includes one day devoted to committee work.

*Includes Christmas adjournment from Dec. 18, 1970 to Jan. 11, 1971; Easter adjournment from Apr. 7, 1971 to Apr. 19, 1971; adjournment for committee work on May 27, 1971; summer adjournment from June 30, 1971 to Sept. 7, 1971; Christmas adjournment from Dec. 23, 1971 to Dec. 28, 1971, Dec. 31, 1971 to Jan. 12, 1972 and Jan. 12, 1972 to Feb. 16, 1972.

¹⁹⁷Includes Easter adjournment from Mar. 29, 1972 to Apr. 13, 1972; and summer adjournment from July 7, 1972 to Aug. 31, 1972.

²⁰Includes Easter adjournment from Apr. 19, 1973 to May 6, 1973; summer adjournment from July 28, 1973 to Aug. 29, 1973 and Sept. 22, 1973 to Oct. 14, 1973; Christmas adjournment from Dec. 22, 1973 to Jan. 2, 1974 and Jan. 15, 1974 to Feb. 25, 1974.

3.2 Representation in the Senate since Confederation, 1867

[illegible]

3.2 Representation in the Senate since Confederation, 1867 (concluded)

Province	1867	1870	1871	1873	1882	1887	1892	1903	1905	1915- 1948	1949- 1973
Western Provinces	...	2	5	5	6	8	9	11	15	24	24
Manitoba	...	2	2	2	3	3	4	4	4	6	6
British Columbia	...	...	3	3	3	3	3	3	3	6	6
Saskatchewan,	}	...	...	...	...	2	2	4	{	4	6
Alberta											
Total	72	74	77	77	78	80	81	83	87	96	102

3.3 Representation in the House of Commons, as at federal general elections 1867-1972

Province or territory	1867	1872	1874 1878	1882	1887 1891	1896 1900	1904	1908 1911	1917 1921	1925 1926 1930	1935 1940 1945	1949	1953 1957 1958 1962 1963 1965	1968 1972
Ontario	82	88	88	92	92	92	86	86	82	82	82	83	85	88
Quebec	65	65	65	65	65	65	65	65	65	65	65	73	75	74
Nova Scotia	19	21	21	21	21	20	18	18	16	14	12	13	12	11
New Brunswick	15	16	16	16	16	14	13	13	11	11	10	10	10	10
Manitoba	...	4	4	5	5	7	10	10	15	17	17	16	14	13
British Columbia	...	6	6	6	6	6	7	7	13	14	16	18	22	23
Prince Edward Island	...	...	6	6	6	5	4	4	4	4	4	4	4	4
Saskatchewan	}	...	...	...	4	4	10	{	10	16	21	20	17	13
Alberta														
Yukon Territory	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Mackenzie River	}	...	...	...	...	...	1	1	1	1	1	1	{	1
NWT ¹														
Newfoundland	...	...	...	...	...	...	...	...	...	...	...	7	7	7
Total	181	200	206	211	215	213	214	221	235	245	245	262	265	264

¹Electoral district of Northwest Territories in 1963, 1965, 1968 and 1972.

3.4 Electoral districts, voters on the list, votes polled and names and addresses of members of the House of Commons as elected at the twenty-ninth general election, Oct. 30, 1972

Province and electoral district	Popu- lation, Census 1971	Voters on list ¹	Total votes polled (incl. rejec- tions) ¹	Votes polled by member ¹	Name of member	Postal address	Party affili- ation ²
NEWFOUNDLAND (7 members)							
Bonavista—Trinity— Conception	69,543	42,024	23,782	12,635	D. Rooney	Lower Island Cove	Lib.
Burin—Burgoe	54,044	29,631	20,267	13,875	Hon. D. C. Jamieson	Swift Current	Lib.
Gander—Twillingate	71,480	39,184	24,328	12,420	J. Lundrigan	Gander	PC
Grand Falls—White Bay—Labrador	75,106	39,291	25,218	14,274	B. Rompkey	Grand Falls	Lib.
Humber—St. George's —St. Barbe	82,263	42,300	29,479	16,378	J. Marshall	Corner Brook	PC
St. John's East	87,477	49,519	31,247	17,825	J. A. McGrath	St. John's	PC
St. John's West	82,191	46,715	27,989	16,818	W. Carter	St. John's	PC
PRINCE EDWARD ISLAND (4 members)							
Cardigan	23,363	14,803	13,001	5,528	Hon. D. J. MacDonald	Bothwell	Lib.
Egmont	30,629	17,439	14,876	7,868	D. MacDonald	Alberton	PC
Hillsborough	35,639	23,688	19,901	10,604	H. Macquarrie	Victoria	PC
Malpeque	22,010	12,743	11,162	5,835	Hon. J. A. MacLean	Belle River	PC
NOVA SCOTIA (11 members)							
Annapolis Valley	74,123	45,615	36,380	20,970	P. Nowlan	Wolfville	PC
Cape Breton—East Richmond	64,371	37,976	31,827	12,071	D. MacInnis	Glace Bay	PC
Cape Breton Highlands— Canso	62,550	39,707	34,074	16,941	Hon. A. J. MacEachen	Inverness	Lib.
Cape Breton— The Sydneys	68,135	40,472	33,392	15,421	R. Muir	Sydney Mines	PC
Central Nova	62,726	41,241	33,022	18,140	E. M. MacKay	Lorne	PC
Cumberland— Colchester North	65,899	43,051	34,072	19,455	R. C. Coates	Amherst	PC
Dartmouth—Halifax East	98,399	56,805	43,422	24,553	M. Forrestall	Dartmouth	PC

3.4 Electoral districts, voters on the list, votes polled and names and addresses of members of the House of Commons as elected at the twenty-ninth general election, Oct. 30, 1972 (continued)

Province and electoral district	Population, Census 1971	Voters on list ¹	Total votes polled (incl. rejections) ¹	Votes polled by member ¹	Name of member	Postal address	Party affiliation ²
NOVA SCOTIA (concluded)							
Halifax	64,523	43,024	32,648	17,986	Hon. R. L. Stanfield ^a	Ottawa	PC
Halifax—East Hants	100,637	61,934	48,054	27,645	B. McCleave	Halifax	PC
South Shore	65,420	43,334	33,407	18,654	L. R. Crouse	Lunenburg	PC
South Western Nova	62,177	38,272	30,775	15,040	C. E. Haliburton	Digby	PC
NEW BRUNSWICK (10 members)							
Carleton—Charlotte	59,244	36,618	24,572	14,431	F. A. McCain	Florenceville	PC
Fundy—Royal	70,316	44,334	32,000	19,107	G. Fairweather	Rothsay	PC
Gloucester	63,556	36,956	29,690	14,210	H. Breau	Tracadie	Lib.
Madawaska—Victoria	54,772	31,692	24,094	13,104	E. Corbin	Edmundston	Lib.
Moncton	80,188	52,489	43,391	22,629	C. H. Thomas	Riverview Heights	PC
Northumberland—Miramichi	54,094	30,102	23,763	10,922	G. A. P. Smith	Newcastle	Lib.
Restigouche	52,485	29,758	24,394	11,650	Hon. J.-E. Dubé	Campbellton	Lib.
Saint John—Lancaster	68,460	42,827	30,512	16,350	T. Bell	Saint John	PC
Westmorland—Kent	51,856	32,492	26,734	14,749	R.-A. LeBlanc	Grande-Digue	Lib.
York—Sunbury	79,586	50,068	38,762	20,274	J. R. Howie	Fredericton	PC
QUEBEC (74 members)							
Abitibi	58,427	35,015	24,465	12,510	G. Laprise	LaSarre	SC
Argenteuil—Deux-Montagnes	80,574	49,669	39,350	18,750	F. Fox	Oka	Lib.
Beauce	69,984	44,013	33,803	13,170	Y. Caron	Ville-St-Georges-Ouest	Lib.
Beauharnois—Salaberry	73,396	46,627	36,519	16,758	G. Lanier	Vaughanfield	Lib.
Bellechasse	64,675	40,508	29,948	12,999	A. Lambert	Berthier-sur-Mer	SC
Berthier	62,521	40,988	29,980	14,035	A. Yanakis	St-Gabriel-de-Brandon	Lib.
Bonaventure—Îles-de-la-Madeleine	55,004	32,041	23,424	12,203	A. Béchard	Carleton	Lib.
Brome—Missisquoi	76,787	47,912	38,600	15,593	H. Graffey	Knowlton	PC
Chambly	120,337	71,680	53,940	26,529	Y. L'Heureux	Beloeil	Lib.
Champlain	62,068	40,182	31,200	14,882	R. Matte	St-Marc-des-Carières	SC
Charlevoix	59,686	37,783	27,337	10,264	G. Caouette	La Malbaie	SC
Chicoutimi	82,658	48,850	38,406	15,545	P. Langlois	Chicoutimi	Lib.
Compton	62,197	37,360	28,248	11,636	H. Latulippe	Lac-Mégantic	SC
Drummond	75,533	47,230	38,914	15,923	J.-M. Boisvert	Drummondville	SC
Frontenac	67,991	40,581	31,595	12,014	L. Corrivé	Thetford Mines	Lib.
Gaspé	56,280	33,773	24,118	12,421	J.-A. Cyr	Chandler	Lib.
Gatineau	81,320	48,769	34,065	15,893	G. Clermont	Thurso	Lib.
Hull	93,804	57,740	39,497	24,630	G. Isabelle	Hull	Lib.
Joliette	83,417	53,159	42,708	18,074	R. LaSalle	Crabtree	Ind.
Kamouraska	63,228	38,751	27,320	14,202	C.-E. Dionne	St-Pascal	SC
Labelle	82,228	51,910	38,368	15,807	M. Dupras	St-Jérôme	Lib.
Lac-Saint-Jean	56,862	32,253	25,412	11,261	M. Lessard	Alma	Lib.
Langelier	58,559	39,260	27,662	14,646	Hon. J. Marchand	Quebec	Lib.
Lapointe	72,451	42,105	31,426	16,191	G. Marceau	Jonquière	Lib.
Laprairie	131,675	78,232	60,283	34,516	I. Watson	Laprairie	Lib.
Lévis	80,037	52,639	42,522	17,514	R. Guay	Lauzon	Lib.
Longueuil	112,703	72,554	52,547	22,129	J. Olivier	Longueuil	Lib.
Lotbinière	70,964	43,858	36,688	21,366	A. Fortin	Victoriaville	SC
Louis-Hébert	106,928	73,331	57,028	30,492	Albanie Morin	Sillery	Lib.
Manicouagan	80,461	49,954	31,364	16,777	G. Blouin	Sept Îles	Lib.
Matane	48,373	28,351	19,715	10,038	P. De Bané	Matane	Lib.
Montmorency	116,204	73,807	56,800	24,231	O. Laflamme	Ste-Foy	Lib.
Pontiac	59,956	35,597	23,752	11,780	T. Lefebvre	Davidson	Lib.
Portneuf	116,079	70,702	55,189	23,626	R. Godin	Les Écureuils	SC
Québec-Est	81,782	54,123	39,883	19,263	G. Duquet	Quebec	Lib.
Richelieu	77,197	50,798	39,321	18,105	F. Côté	Ste-Brigitte-des-Saults	Lib.
Richmond	62,741	36,959	29,211	14,039	L. Beaudoin	Brompton	SC
Rimouski	69,276	43,191	32,065	13,241	E. Allard	Rimouski	SC
Rivière-du-Loup—Témiscouata	59,816	36,427	26,804	10,012	R. Gendron	Rivière-du-Loup	Lib.
Roberval	53,671	31,755	24,254	11,310	C.-A. Gauthier	Missassini	SC
Saint-Hyacinthe	82,540	54,602	44,921	16,686	C. Wagner	Montreal	PC
Saint-Jean	83,274	51,000	39,915	16,466	W.B. Smith	Hemmingford	Lib.
Saint-Maurice	71,147	45,471	37,154	19,840	Hon. J. Chrétien	Lac-des-Piles	Lib.
Shefford	79,083	49,734	40,369	18,809	G. Rondeau	Granby	SC
Sherbrooke	97,550	64,848	49,592	20,568	Irénée Pelletier	Sherbrooke	SC
Témiscamingue	54,545	30,871	25,227	15,548	R. Caouette ^a	Rouyn	Lib.
Terrebonne	122,332	72,952	57,420	24,901	J.-R. Comtois	Repentigny	SC
Trois-Rivières métropolitain	95,389	63,007	47,704	19,892	C.-G. Lajoie	Cap-de-la-Madeleine	Lib.
Villeneuve	58,859	34,587	26,321	12,070	O. Tétrault	Val-d'Or	SC
Island of Montreal and Île-Jésus							
Ahuntsic	90,537	55,705	44,340	21,740	Hon. Jeanne Sauvé	Outremont	Lib.
Dollard	123,429	74,954	60,822	38,995	Hon. J.-P. Goyer	St-Laurent	Lib.
Duvernay	112,102	63,734	49,907	23,050	Y. Demers	Ville-de-Laval	Lib.
Gamelin	92,533	57,551	44,052	20,860	A. Portelance	Montreal	Lib.
Hochelaga	65,393	40,498	27,512	11,235	Hon. G. Pelletier	Montreal	Lib.
Lachine	92,202	57,207	46,815	26,688	R. Blaker	Pointe-Claire	Lib.
Lafontaine	70,166	43,892	30,326	13,423	G.-C. Lachance	Montreal	Lib.

3.4 Electoral districts, voters on the list, votes polled and names and addresses of members of the House of Commons as elected at the twenty-ninth general election, Oct. 30, 1972 (continued)

Province and electoral district	Population, Census 1971	Voters on list ¹	Total votes polled (incl. rejections) ¹	Votes polled by member ¹	Name of member	Postal address	Party affiliation ²
QUEBEC (concluded)							
LaSalle	116,235	71,045	52,853	30,815	J. Campbell	LaSalle	Lib.
Laurier	67,023	34,526	21,971	10,946	F.-E. Leblanc	Montreal	Lib.
Laval	115,908	67,085	51,725	28,120	M. Roy	Ville-de-Laval	Lib.
Maisonneuve—Rosemont	74,499	46,861	32,811	13,607	J.-A. Thomas	Montreal	Lib.
Mercier	118,807	70,241	51,502	22,207	P. Boulanger	Pointe-aux-Trembles	Lib.
Montréal—Bourassa	124,746	75,293	54,578	25,728	J.-L. Trudel	Montréal-Nord	Lib.
Mount Royal	90,844	58,435	46,982	36,874	Rt. Hon. P.-E. Trudeau ³	Ottawa	Lib.
Notre-Dame-de-Grâce	77,052	46,713	36,882	24,126	Hon. W. Allmand	Montreal	Lib.
Outremont	75,621	47,019	35,741	21,373	Hon. M. Lalonde	Montreal	Lib.
Papineau	73,439	43,061	30,657	15,356	Hon. A. Ouellet	Montreal	Lib.
Saint-Denis	77,362	37,215	28,313	16,991	M. Prud'homme	Montreal	Lib.
Saint-Henri	57,162	31,246	20,639	7,191	G. Loiselle	Montreal	Lib.
Saint-Jacques	53,179	25,007	16,929	8,702	J. Guilbault	Montreal	Lib.
Sainte-Marie	58,381	37,043	24,110	7,945	R. Dupont	Ville-Laflèche	Lib.
Saint-Michel	138,109	74,583	52,771	23,830	Monique Bégin	Montreal	Lib.
Vaudreuil	112,103	65,561	52,475	27,372	H. T. Herbert	Hudson	Lib.
Verdun	74,718	48,036	36,894	20,943	Hon. B. Mackasey	Verdun	Lib.
Westmount	83,645	53,393	42,272	24,052	Hon. C.M. Drury	Westmount	Lib.
ONTARIO (88 members)							
Algoma	52,746	29,469	22,466	10,161	M. Foster	Desbarats	Lib.
Brant	97,549	60,227	47,270	20,001	D. Blackburn	Brantford	NDP
Bruce	63,308	42,588	33,911	14,974	R. Whicher	Warton	Lib.
Cochrane	54,786	30,596	22,475	10,247	R. W. Stewart	Moonbeam	Lib.
Elgin	66,608	41,217	34,681	17,280	J. Wise	St. Thomas	PC
Essex—Windsor	94,846	55,501	42,048	19,793	Hon. E. F. Whelan	Anderdon	Lib.
Fort William	60,207	37,282	29,832	11,535	P. McRae	Vicker's Heights	Lib.
Frontenac—Lennox and Addington	61,668	38,321	29,386	16,562	D. Alkenbrack	Napanee	PC
Glengarry—Prescott—Russell	62,599	38,499	29,877	14,780	D. Ethier	Dalkeith	Lib.
Grenville—Carleton	119,408	72,895	62,075	32,832	W. Baker	Ottawa	PC
Grey—Simcoe	67,997	44,195	34,789	17,092	G. Mitges	Owen Sound	PC
Halton	105,801	62,588	52,039	22,640	T. O'Connor	Oakville	PC
Halton—Wentworth	124,390	76,643	63,535	31,150	B. Kemping	Dundas	Lib.
Hamilton East	74,709	41,231	31,134	13,053	Hon. J.C. Munro	Hamilton	Lib.
Hamilton Mountain	106,266	64,640	53,306	21,708	D.M. Beattie	Hamilton	PC
Hamilton—Wentworth	99,169	61,756	49,403	18,611	S. O'Sullivan	Stoney Creek	PC
Hamilton West	81,664	50,566	38,752	19,847	L. M. Alexander	Hamilton	PC
Hastings	64,328	41,278	31,833	16,591	J. Ellis	Belleville	PC
Huron	58,515	36,686	29,751	18,921	R. E. McKinley	Zurich	PC
Kenora—Rainy River	54,853	31,910	23,331	9,244	J. M. Reid	Kenora	Lib.
Kent—Essex	85,580	51,337	36,524	18,850	H. W. Danforth	Blenheim	PC
Kingston and The Islands	82,907	54,183	43,184	22,788	Flora MacDonald	Kingston	PC
Kitchener	106,127	64,494	48,644	18,351	K. R. Hymmen	Kitchener	Lib.
Lambton—Kent	67,892	41,462	31,201	16,056	J. R. Holmes	Wallaceburg	PC
Lanark—Renfrew—Carleton	63,818	41,483	34,876	17,893	P. Dick	Kanata	PC
Leeds	66,263	41,905	34,272	18,130	T. Cossitt	Brockville	PC
Lincoln	84,935	49,985	39,777	16,830	K. Higson	Grimsby	PC
London East	89,221	51,271	37,899	14,037	C. R. Turner	London	Lib.
London West	106,317	74,352	59,747	29,474	J. Buchanan	London	Lib.
Middlesex	92,814	55,964	45,159	20,614	W. C. Frank	Hyde Park	PC
Niagara Falls	89,537	53,378	39,722	15,705	J. Hueglin	Niagara Falls	PC
Nickel Belt	85,577	44,556	35,203	14,033	J. Rodriguez	Coniston	NDP
Nipissing	67,312	37,767	30,485	12,451	J.-J. Blais	North Bay	Lib.
Norfolk—Haldimand	74,568	46,348	39,588	21,214	W. Knowles	Langton	PC
Northumberland—Durham	73,705	46,410	38,873	17,385	A. Lawrence	Janetville	PC
Ontario	87,842	52,037	42,839	16,328	N.A. Cafik	Pickering	Lib.
Oshawa—Whitby	111,361	67,580	57,624	23,757	E. Broadbent	Oshawa	NDP
Ottawa—Carleton	130,906	80,040	67,771	31,394	Hon. J. Turner	Ottawa	Lib.
Ottawa Centre	70,584	47,032	37,459	14,101	H. Poulin	Ottawa	Lib.
Ottawa East	71,277	46,982	34,785	20,450	J.-R. Gauthier	Ottawa	Lib.
Ottawa West	98,956	64,443	55,004	22,169	P. Reilly	Ottawa	PC
Oxford	80,336	49,439	40,838	25,438	W. Nesbitt	Woodstock	PC
Parry Sound—Muskoka	62,162	40,428	30,871	14,297	S. Darling	Burks Falls	PC
Peel—Dufferin—Simcoe	119,885	71,239	57,780	25,692	E. Madill	Orangeville	PC
Peel South	172,352	103,773	82,432	31,984	D. Blenkarn	Mississauga	PC
Perth—Wilmot	72,996	46,100	35,844	19,859	B. Jarvis	Stratford	PC
Peterborough	85,064	55,642	45,382	20,282	Hon. J. H. Faulkner	Lakefield	Lib.
Port Arthur	57,456	35,251	27,586	14,351	Hon. R. K. Andras	Thunder Bay	Lib.
Prince Edward—Hastings	74,856	45,904	35,959	19,789	Hon. G. Hees	Cobourg	PC
Renfrew North—Nipissing East	61,707	33,278	26,144	13,553	L. D. Hopkins	Petawawa	Lib.
Sarnia—Lambton	83,631	49,590	38,010	16,112	J. Cullen	Sarnia	Lib.
Sault Ste. Marie	81,002	44,810	35,917	12,851	C. Symes	Sault Ste. Marie	NDP
St. Catharines	101,418	64,983	49,281	19,526	T. Morgan	St. Catharines	PC
Simcoe North	93,655	59,500	46,759	22,075	P. B. Rynard	Orillia	PC
Stormont—Dundas	72,052	44,446	33,750	17,243	Hon. L. Lamoureux ⁴	Cornwall	PC

3.4 Electoral districts, voters on the list, votes polled and names and addresses of members of the House of Commons as elected at the twenty-ninth general election, Oct. 30, 1972 (continued)

Province and electoral district	Population, Census 1971	Voters on list ¹	Total votes polled (incl. rejections) ¹	Votes polled by member ¹	Name of member	Postal address	Party affiliation ²
ONTARIO (concluded)							
Sudbury	94,624	56,886	44,222	24,125	J. Jerome	Sudbury	Lib.
Thunder Bay	53,214	31,140	22,782	10,954	K. Penner	Nipigon	Lib.
Timiskaming	49,870	29,632	23,383	11,327	A. Peters	New Liskeard	NDP
Timmins	53,616	31,974	25,461	10,804	J. Roy	Timmins	Lib.
Victoria—Haliburton	60,996	40,850	32,381	18,450	W. C. Scott	Kinmount	PC
Waterloo	120,719	76,139	60,149	24,197	M. Saltsman	Galt	NDP
Welland	82,860	51,171	38,514	18,693	V. Raitlon	Port Colborne	Lib.
Wellington	75,989	48,034	39,390	20,730	A. D. Hales	Guelph	PC
Wellington—Grey— Dufferin—Waterloo	73,846	45,692	34,082	17,081	P. Beatty	Fergus	PC
Windsor—Walkerville	87,514	51,886	40,489	17,298	M. MacGuigan	Windsor	Lib.
Windsor West	90,466	50,978	37,323	17,957	Hon. H. Gray	Windsor	Lib.
York North	125,296	77,799	66,321	28,333	B. J. Danson	Willowdale	Lib.
York—Simcoe	99,624	61,962	50,594	22,957	S. Stevens	King City	PC
Metropolitan Toronto							
Broadview	78,601	36,640	26,907	11,063	J. Gilbert	Toronto	NDP
Davenport	84,780	27,761	21,858	9,366	C. L. Caccia	Toronto	Lib.
Don Valley	104,606	68,705	61,697	30,764	J. Gillies	Thornhill	PC
Eglinton	78,314	52,875	43,132	19,389	Hon. M. Sharp	Ottawa	Lib.
Etobicoke	135,971	85,788	72,200	32,007	Hon. A. Gillespie	Toronto	Lib.
Greenwood	80,797	45,157	33,950	14,260	A. F. Brewin	Toronto	NDP
High Park—Humber Valley	86,050	52,047	43,944	18,411	O. Jelinek	Toronto	PC
Parkdale	82,207	39,250	28,321	12,214	Hon. S. Haidasz	Toronto	Lib.
Rosedale	81,265	49,063	37,086	16,072	Hon. D. S. Macdonald	Ottawa	Lib.
St. Paul's	72,174	46,983	37,504	15,712	R. Atkey	Toronto	PC
Scarborough East	149,514	85,506	69,193	27,339	R. Stackhouse	Scarborough	PC
Scarborough West	87,383	50,866	41,800	15,028	J. Harney	Toronto	NDP
Spadina	75,487	27,423	20,581	8,323	P. Stollery	Toronto	Lib.
Toronto—Lakeshore	77,227	46,382	37,665	14,692	T. Grier	Toronto	NDP
Trinity	81,073	28,791	21,573	8,517	Hon. P. Hellyer	Toronto	PC
York Centre	160,051	84,806	65,063	26,911	J. E. Walker	Downsview	Lib.
York East	102,910	61,283	48,384	18,729	I. Arrol	Toronto	PC
York—Scarborough	193,156	113,716	94,215	39,219	Hon. R. Stanbury	Ottawa	Lib.
York South	85,768	40,356	30,890	14,225	D. Lewis ³	Toronto	NDP
York West	139,650	71,773	57,513	22,270	J. Fleming	Toronto	Lib.
MANITOBA (13 members)							
Brandon—Souris	62,547	40,089	30,585	17,923	Hon. W. G. Dinsdale	Brandon	PC
Churchill	77,507	41,916	28,290	9,462	K. Taylor	Flin Flon	PC
Dauphin	54,110	33,729	25,262	12,583	G. Ritchie	Dauphin	PC
Lisgar	56,974	34,744	24,515	17,253	J. B. Murta	Grassville	PC
Marquette	54,070	32,474	25,915	16,155	C. Stewart	Minnedosa	PC
Portage	51,951	29,710	21,957	9,781	P. Masniuk	Inwood	PC
Provencher	62,089	36,026	25,394	11,262	J. Epp	Steinbach	Lib.
St. Boniface	103,943	64,610	50,733	22,200	J.-P. Guay	Winnipeg	Lib.
Selkirk	98,106	61,817	46,747	17,872	D. Rowland	Winnipeg	NDP
Winnipeg North	83,845	52,902	37,859	15,926	D. Orlikow	Winnipeg	NDP
Winnipeg—Centre	73,559	43,008	28,573	13,263	S. H. Knowles	Winnipeg	NDP
Winnipeg South	94,743	63,574	50,493	25,501	Hon. J. Richardson	Winnipeg	Lib.
Winnipeg South Centre	114,803	72,626	57,314	25,554	D. McKenzie	Winnipeg	PC
SASKATCHEWAN (13 members)							
Assiniboia	57,131	33,122	27,656	9,936	B. Knight	Weyburn	NDP
Battleford—Kindersley	66,855	37,435	29,630	10,374	N. Horner	Rosetown	PC
Mackenzie	47,919	28,335	21,235	8,163	S. J. Korchinski	Rama	PC
Meadow Lake	50,391	27,433	20,298	7,194	E. Neddoly	Shellbrook	NDP
Moose Jaw	61,810	37,595	30,296	11,968	D. Neil	Moose Jaw	PC
Prince Albert	72,195	42,540	33,596	19,410	Rt. Hon. J. G. Diefenbaker	Prince Albert	PC
Qu'Appelle—Moose Mountain	64,000	37,029	29,480	14,706	Hon. A. Hamilton	Estevan	PC
Regina East	89,048	54,657	42,498	17,781	J. Balfour	Regina	PC
Regina—Lake Centre	97,537	61,083	48,460	18,935	L. Benjamin	Regina	NDP
Saskatoon—Biggar	87,303	54,779	40,896	16,787	A. P. Gleave	Saskatoon	NDP
Saskatoon—Humboldt	102,185	65,202	54,752	24,733	Hon. O. E. Lang	Saskatoon	Lib.
Swift Current— Maple Creek	60,972	36,188	29,106	11,500	F. Hamilton	Swift Current	PC
Yorkton—Melville	68,896	43,301	34,295	15,998	L. Nystrom	Yorkton	NDP
ALBERTA (19 members)							
Athabasca	67,746	32,868	22,026	13,069	P. Yewchuk	Lac La Biche	PC
Battle River	59,545	33,794	26,388	16,268	H. Kuntz	Camrose	PC
Calgary Centre	87,346	56,347	43,229	22,667	H. Andre	Calgary	PC
Calgary North	118,118	67,305	52,821	30,897	E. Woolliams	Calgary	PC
Calgary South	133,796	78,228	61,963	34,923	P. Bowden	Calgary	PC
Crowfoot	55,672	32,647	25,076	18,667	J. Horner	Pollockville	PC
Edmonton Centre	94,410	56,112	40,332	21,406	S. E. Paproski	Edmonton	PC
Edmonton East	105,904	57,997	41,328	21,136	W. M. Skoreyko	Sherwood Park	PC
Edmonton—Strathcona	109,725	67,819	54,453	26,908	D. Roche	Edmonton	PC
Edmonton West	126,765	75,330	59,430	29,875	Hon. M. Lambert	Edmonton	PC

3.4 Electoral districts, voters on the list, votes polled and names and addresses of members of the House of Commons as elected at the twenty-ninth general election, Oct. 30, 1972 (concluded)

Province and electoral district	Population, Census 1971	Voters on list ¹	Total votes polled (incl. rejections) ¹	Votes polled by member ¹	Name of member	Postal address	Party affiliation ²
ALBERTA (concluded)							
Lethbridge	75,795	44,585	33,302	18,847	K. Hurlburt	Fort Macleod	PC
Medicine Hat	62,697	36,563	28,350	15,027	B. Hargrave	Walsh	PC
Palliser	100,115	58,886	46,150	29,285	S. Schumacher	Drumheller	PC
Peace River	62,413	36,117	25,728	14,255	G. Baldwin	West Peace River	PC
Pembina	94,678	54,342	41,676	23,864	D. Hollands	Ardrossan	PC
Red Deer	78,792	45,308	34,426	20,919	T. G. Towers	Red Deer	PC
Rocky Mountain	63,834	36,333	26,887	12,985	J. Clark	Edson	PC
Vegreville	58,986	34,720	27,077	19,440	D. Mazankowski	Vegreville	PC
Wetaskiwin	71,537	41,689	31,554	19,350	S. Schellenberger	Spruce Grove	PC
BRITISH COLUMBIA (23 members)							
Burnaby—Richmond—Delta	123,381	73,060	56,245	19,798	J. Reynolds	Delta	PC
Burnaby—Seymour	103,410	64,363	48,547	18,274	E. Nelson	Burnaby	NDP
Capilano	103,918	64,435	51,821	24,492	Hon. J. Davis	West Vancouver	Lib.
Coast Chilcotin	67,858	38,088	25,884	8,868	H. Olausson	Powell River	NDP
Comox—Alberni	89,644	50,681	36,059	17,478	T. Barnett	Campbell River	NDP
Esquimalt—Saanich	105,411	65,937	50,331	20,542	D. Munro	Saanich	PC
Fraser Valley East	85,401	49,749	35,674	12,303	A. B. Patterson	Abbotsford	PC
Fraser Valley West	117,467	67,260	48,127	22,613	M. Rose	Langley	NDP
Kamloops—Cariboo	104,739	60,670	43,170	14,708	L. S. Marchand	Kamloops	Lib.
Kootenay West	67,513	39,431	29,553	15,633	R. Harding	Silverton	NDP
Nanaimo—Cowichan—The Islands	97,106	61,054	46,324	25,486	T. C. Douglas	Nanaimo	NDP
New Westminster	106,331	64,896	46,842	19,224	S. M. Leggatt	Port Coquitlam	NDP
Okanagan Boundary	101,304	65,322	48,559	20,468	G. H. Whittaker	Kelowna	PC
Okanagan—Kootenay	92,717	55,260	38,845	12,416	D. Stewart	Kimberley	Lib.
Prince George—Peace River	108,022	55,524	37,428	14,341	F. Oberle	Chetwynd	PC
Skeena	87,917	41,077	27,754	13,100	F. Howard	Terrace	NDP
Surrey—White Rock	104,072	59,086	44,955	21,209	M. Mather	Surrey	NDP
Vancouver Centre	91,473	68,848	47,740	19,341	Hon. R. Basford	Vancouver	Lib.
Vancouver East	85,071	43,043	28,472	13,524	C. P. Neale	Vancouver	NDP
Vancouver Kingsway	85,005	46,661	33,117	18,107	Grace MacInnis	Vancouver	NDP
Vancouver Quadra	79,949	51,621	42,042	17,763	B. Clarke	Vancouver	PC
Vancouver South	88,701	57,238	44,931	17,762	J. A. Fraser	Vancouver	PC
Victoria	88,211	63,077	48,591	22,842	A. B. McKinnon	Victoria	PC
YUKON TERRITORY (1 member)							
Yukon	18,388	10,664	8,638	4,332	E. Neilsen	Whitehorse	PC
NORTHWEST TERRITORIES (1 member)							
Northwest Territories	34,807	19,483	14,350	5,616	W. Firth	Yellowknife	NDP

¹Unofficial figures. Official figures appear in the *Report of the Chief Electoral Officer*.

²Party standings as a result of the general election, Oct. 30, 1972: Liberal 109, Progressive Conservative 107, New Democratic 31, Social Credit 15. One member was elected as an independent and one without any party affiliation.

³Leader of a political party.

⁴Speaker of the House of Commons.

3.5 Voters on the lists and votes polled at the federal general elections of 1963, 1965, 1968 and 1972

Province or territory	Voters and votes polled			
	Voters on the lists			
	1963	1965	1968	1972 ¹
Newfoundland	221,321	226,082	237,594	288,664
Prince Edward Island	57,029	56,484	58,216	68,673
Nova Scotia	401,874	401,521	412,791	491,431
New Brunswick	304,732	304,734	317,912	387,336
Quebec	2,807,634	2,933,031	3,083,260	3,683,413
Ontario	3,455,363	3,609,895	3,846,064	4,584,794
Manitoba	516,525	517,928	531,563	607,225
Saskatchewan	505,551	508,733	517,598	558,699
Alberta	700,920	725,447	774,565	946,990
British Columbia	921,074	972,063	1,059,959	1,306,381
Yukon Territory ⁴	6,878	6,660	7,559	10,664
Northwest Territories ⁵	11,856	12,326	13,807	19,483
Total	9,910,757	10,274,904	10,860,888	12,953,753

3.5 Voters on the lists and votes polled at the federal general elections of 1963, 1965, 1968 and 1972 (concluded)

Province or territory	Voters and votes polled			
	Votes polled			
	1963	1965	1968	1972 ¹
Newfoundland	152,175	148,392	161,570	182,310
Prince Edward Island	69,486 ²	72,006 ²	51,225	58,940
Nova Scotia	419,352 ²	420,146 ²	339,600	391,073
New Brunswick	245,557	244,184	254,716	297,912
Quebec	2,143,246	2,073,314	2,229,345	2,786,233
Ontario	2,799,870	2,770,222	2,973,745	3,647,650
Manitoba	401,870	382,362	403,272	453,637
Saskatchewan	419,973	404,631	416,793	442,198
Alberta	552,164	534,870	567,416	722,196
British Columbia	740,229	731,438	804,108	961,011
Yukon Territory ⁴	6,051	5,760	6,563	8,638
Northwest Territories ⁵	8,663	9,403	9,563	14,350
Total	7,958,636	7,796,728	8,217,916	9,966,148

Corresponding statistics for the general election of 1962 are given in the 1972 *Canada Year Book*, p 108.

¹Unofficial figures. Official figures appear in the *Report of the Chief Electoral Officer*.

²Each voter in the double-member constituency of Queens County, PEI had two votes; in 1963, 26,472 voters on the list cast 42,703 votes; in 1965, 26,250 voters on the list cast 44,895 votes.

³Each voter in the double-member constituency of Halifax, NS had two votes; in 1963, 122,846 voters on the list cast 183,402 votes; in 1965, 124,633 voters on the list cast 184,153 votes.

⁴Electoral district of Yukon.

⁵Electoral district of Northwest Territories.

3.6 Number of municipalities in Canada classified by type and size group, by province, as at Jan. 1, 1973

Type and size group	Nfld.	PEI	NS	NB	Que.	Ont.	Man.	Sask.	Alta.	BC	YT	NWT	Canada
TYPE													
Regional municipalities	—	—	—	—	75	40	—	—	—	28	—	—	143
Metropolitan and regional municipalities ¹	—	—	—	—	3	7	—	—	—	—	—	—	10
Counties and regional districts	—	—	—	—	72	33	—	—	—	28	—	—	133
Unitary municipalities	103	33	65	123	1,590	849	184	786	327	143	3	4	4,210
Cities	2	1	3	6	68	40 ²	5	11	9	31	2	1	179
Towns	101 ³	7	38	21	199	149	33	131	102	14	—	3	798
Villages	—	25	—	96	279	141	41	352	168	59	1	—	1,162
Rural municipalities ⁴	—	—	24	—	1,044	519	105	292	48	39	—	—	2,071
Quasi-municipalities ⁵	171	—	—	—	—	14	19	9	24	—	3	3	243
Total	274	33	65	123	1,665	903	203	795	351	171	6	7	4,596
POPULATION SIZE GROUP (1971 Census)													
Unitary municipalities	—	—	1	—	3	14	1	2	2	2	—	—	25
Over 100,000	1	—	2	1	10	13	—	—	—	6	—	—	33
50,000-99,999	1	1	15	6	72	61	3	5	12	29	1	—	206
10,000-49,999	101	32	47	116	1,505	761	180	779	313	106	2	4	3,946
Under 10,000	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	103	33	65	123	1,590	849	184	786	327	143	3	4	4,210

¹Includes urban communities in Quebec; and Metropolitan Toronto, regional municipalities and the district municipality in Ontario.

²Includes the five boroughs of Metropolitan Toronto.

³Includes 8 rural districts.

⁴Includes municipalities in Nova Scotia; parishes, townships, united townships and municipalities in Quebec; townships in Ontario; rural municipalities in Manitoba and Saskatchewan; municipal districts and counties in Alberta; and districts in British Columbia.

⁵Includes local government communities, local improvement districts and the metropolitan area in Newfoundland; improvement districts in Ontario and Alberta; local government districts in Manitoba; local improvement districts in Saskatchewan and the Yukon Territory; and hamlets in the Northwest Territories.

3.7 Canadian financial contributions to the United Nations, years ended Mar. 31, 1973 and 1974 with totals for 1945-74 (thousand dollars Canadian)

Agency	1973	1974	Total 1945-74
UN regular budget	5,451	7,169	73,163
Peacekeeping			
UNEF I	—	—	5,910
ONUC	—	—	9,187
UNFICYP	1,585	1,722	21,029
UN Special Account	—	—	4,307
UNEF II	—	954	954

3.7 Canadian financial contributions to the United Nations, years ended Mar. 31, 1973 and 1974 with totals for 1945-74 (thousand dollars Canadian) (concluded)

Agency	1973	1974	Total 1945-74
Social and economic programs			
UNDP	18,000	20,300	114,371
Special Fund	—	—	21,378
EPTA	—	—	26,376
UNHCR	400	950 ¹	38,182
UNICEF	1,700	2,300	27,875
UNRWA	650	1,150	30,253
UNITAR	60	60	540
UNETPSA	49	75	299
WFP	20,279	20,740	127,513
UNFPA	1,996	2,000	7,052
UN Fund for Congo	—	—	4,489
Committee on Elimination of Racial Discrimination	1	1	8
Trust Fund for South Africa	10	10	40
UN Fund for Drug Abuse Control	200	200	550
UN Voluntary Fund for Environment	99	905	1,004
Miscellaneous	—	—	16,215
Specialized agencies, IAEA and GATT			
ILO	1,360	1,517	15,309
FAO	1,678	2,842	20,216
WHO	1,699	4,581	28,078
UNESCO	1,569	1,756	17,673
ICAO	315	539	5,732
IMCO	21	27	225
ITU	328	453	3,598
WMO	100	172	969
UPU	79	88	737
IAEA regular and operational budgets	499	236	5,234
GATT	323	401	2,690
Miscellaneous	—	—	92
UN Association in Canada	27	—	373
Total	58,478	71,148	631,621

¹Includes a special contribution of \$500,000 to the Special Program for Resettlement of Refugees in the Southern Sudan.

Sources

- 3.1 Journals Branch, House of Commons.
- 3.2 Clerk of the Senate.
- 3.3 Office of the Representation Commissioner.
- 3.4 - 3.5 Office of the Chief Electoral Officer.
- 3.6 Public Finance Division, Institutional and Public Finance Statistics Branch, Statistics Canada.
- 3.7 Information Division, Department of External Affairs.

Chapter 4

Demography

Demography deals with the growth, distribution, density, characteristics, vital statistics, migration, etc., of human population. The present chapter is concerned with this subject as it applies to the population of Canada by bringing together recent data on these various demographic components.

The subject is treated by first providing a brief picture of population growth in Canada, followed by a summary from the 1971 Census of the geographical distributions of population and some of the principal demographic characteristics relating to population, households and families (Sections 4.1 to 4.4). Other statistics from the 1971 Census of Canada may be found in Chapters 8, 11, and 14 of this edition on the subjects of labour force, agriculture, and housing, respectively.

A major portion of the chapter on Demography is concerned with the vital processes (fertility, mortality, nuptiality) which play such a major role in shaping population trends and composition (Sections 4.5 to 4.8).

The final section of the Demography chapter deals briefly with the important migration factors (immigration, emigration and internal migration) which also exert a significant influence on population change and structure (Section 4.9).

4.1 Population growth

The most fundamental fact about a population is its rate of growth which affects almost every aspect of the national life. The opening up of a new continent and the gradual evolution of an industrial and urban economy form the historical background for population growth in Canada. Several demographic elements have combined to produce this growth: births, deaths, immigration and emigration, which are the processes, or components, of population change.

4.1.1 The early period

The growth of Canada's population today is the culmination of a trend which began around the early 17th century with the arrival of the first French settlers. From this beginning, the population of the area now known as Canada (excluding Newfoundland) grew from a handful of colonists and an unknown number of native Indians and Eskimos in 1611 to about 2.4 million in 1851 and 3.7 million at the first Census of Canada in 1871. Rough estimates indicate there were about 136,000 Indians in 1851.

Growth rates in the early settlement years were very irregular: the immigrant population grew rapidly while the native population remained almost stationary or declined as a result of attrition from warfare and disease. Between 1681, when the number of settlers passed the 10,000 mark, and 1851 the average annual growth rate of the non-native population in each decade varied between 1.6% and 4.5%; the average annual growth rate for the whole period was 3.2%. The small size of the initial population and the continuous expansion into empty lands were contributing factors in the rapid growth rates in the early periods.

The decade 1851-61 was one of surging growth, second only to the growth rate in the first decade of the present century (Table 4.1). The average annual growth rate during this period was 2.9%, with about 23% of the total population increase due to net migration; over 350,000 immigrants arrived and there was very little emigration. A long period of slow growth followed and lasted to the beginning of the 20th century. Between 1861 and 1901 the average growth rate was closer to 1%, matched only by the rate during the depression period of the 1930s. This slow growth toward the end of the last century was due to heavy emigration resulting in a net migration loss (Table 4.2). Emigrants included elements of both the Canadian and foreign-born populations. While many immigrants continued to come to Canada during this period a large number of them re-emigrated to the United States where prospective settlers were offered more favourable economic and climatic conditions. The westward movement in the United States attracted not only settlers from every part of that country, but from Canada as well.

4.1.2 Recent trends

The beginning of the present century witnessed a flood of immigrants which helped to raise the growth rate to 3.0% per annum during 1901-11, the highest rate recorded since 1851. Over 1.5 million immigrants entered Canada in this decade, as many as had arrived during the previous 40 years. As a result, over 44% of the total population increase during this period was due to migration gain.

Following the phenomenal increase during 1901-11, the intercensal rate of increase dropped during each successive decade until it reached a low of 10.9% during 1931-41 when the reduced birth rates during the economic depression seriously affected population growth. Moreover, immigration during this period was negligible, and as a result there was a net migration loss of about 92,000 persons.

After 1941, the population again registered an accelerated growth, reaching a near-record rate of expansion of 30.2% in 1951-61, nearly three times the rate of increase in 1931-41. Part of the accelerated increase in population after 1941 was accounted for by the addition of Newfoundland in 1949 but the surge in birth rates (commonly referred to as the "baby boom") and the upswing in immigration during the immediate postwar years were the main factors of growth during the period.

After 1956 a steady decline in population growth occurred, reaching a rate of 1.5% per annum in 1966-71. This gradual fall in the growth rate in recent years — the lowest except the depression decade — has evoked special interest mainly because it occurred after the growth rate reached a peak of 3.3% in 1956-57 and at a time when the economic outlook was favourable for high growth rates. The current annual growth rate (1972-73) is estimated to be about 1.2%. In absolute numbers, between 1966 and 1971 the population increased by 1,553,000, or 310,000 a year, which was about 25% lower than the increase during 1951-56. The sharp reduction in population growth in recent years due to the marked decline in birth rates and lower immigration has caused speculation on the possibility of Canada's population growth approaching the zero level in the very near future.

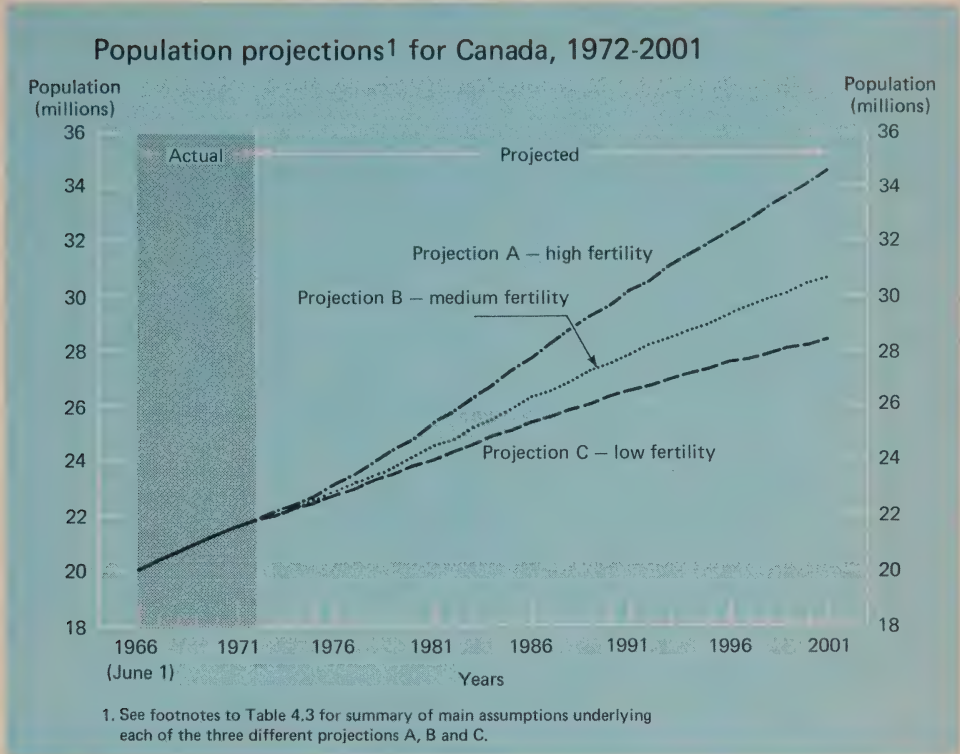
4.1.3 Future prospects

The dominant component of population growth in Canada since 1851 has been natural increase. This trend is likely to continue in the future with a modest contribution from migration. Of the two components of natural increase (births minus deaths), the birth rate will continue to be the dynamic and crucial factor of growth. Moreover, fluctuations in birth rates can create major economic and social problems as society adjusts itself to the effects of such fluctuations. For example, although the postwar "baby boom" is long past, society is now feeling the impact of this generation on the labour market and other aspects of the national economy. Similarly, problems associated with the sharp drop in the birth rate since 1957 are being felt, for example, by school systems as smaller numbers of children enter school.

Because of the importance of the fertility factor, the tempo of future growth depends mainly on whether the current total fertility rate of 2.19 births (1971), which is close to the "replacement level" of 2.13 births under current mortality conditions, will remain constant, fall or rise in future. A fertility rate close to the replacement level does not mean that Canada will soon reach zero population growth. Calculations show that even if immigration ceased, and the average fertility rate were only 2.13, the population would continue to grow until about the year 2040, when birth and death rates would each stabilize at about 13 per 1,000 population. This long delay in achieving zero growth may be attributed to the current high percentage of young people who are moving into the child-bearing age groups.

Table 4.3 summarizes for Canada as a whole the results of the most recent population projections for Canada and the provinces prepared under different assumptions of fertility and migration. These projections replace earlier ones which were shown in the *1973 Canada Year Book*. For a full account of the methodology and results of these projections, see *Population projections for Canada and the provinces, 1972-2001*, Statistics Canada Catalogue No. 91-514.

Projection A uses the highest fertility assumption of 2.60 children by 1971 and a net migration gain of 100,000 a year. Under these assumptions, the total population will increase from 21.6 million in 1971 to 27.8 million in 1986 and will reach 34.6 million by 2001. On the other hand, Projection C is a low projection based on an assumed total fertility rate for Canada of 1.80 by 1985, and a net migration gain of 60,000 a year. As shown in Table



4.3, this projection yields a total population of 25.4 million by 1986 and 28.4 million by 2001.

These projections indicate that after a short phase of increase in the population growth rate (i.e. between 1976 and 1986), the rate will gradually decline toward the end of the century to about 1.3% per annum according to Projection A, and to 0.5% under Projection C. The slowdown in population growth and fertility rates will cause some aging of Canada's population. As a result of an upward shift in the age structure, there will be a steady decline in the child-dependency ratio and an increase in the old age dependency ratio.

4.2 Population distribution

Decennial and quinquennial censuses of Canada make possible periodic assessments of the size and location of the nation's human resources. They provide data on the distribution of population for many types of geographical, political, and statistical entities. Used as benchmarks, the census counts enable annual estimates to be made for some of the larger areas (e.g. provinces, counties, metropolitan areas). A small selection of these data is presented in this Section, embodying results of the 1971 Census and later estimates to 1973 where applicable.

4.2.1 Provincial and sub-provincial areas

Heading the list of population distributions are those relating to federal electoral districts. The basic legal reason for decennial censuses is to enable a redistribution of seats in the House of Commons. Under the terms of the Electoral Boundaries Readjustment Act, the census must provide population counts by electoral districts for this purpose. Those from the most recent (1971) census are shown in Chapter 3, Table 3.4, according to the electoral district boundaries established by the 1966 Representation Order (i.e. the redistribution following the 1961 Census).

Provincial trends, 1951-71. The growth of Canada's population has not been uniformly distributed among the provinces. The distributions for the 1951-71 period are presented in Table 4.4 and they show substantial variations in rates of growth. This is evident from the number of provinces with higher or lower growth rates compared with the national average. Ontario, British Columbia, Alberta and the Northwest Territories had growth rates higher than national figures in all five-year periods between 1951 and 1971. However, a decline in the rate of growth over the past 20 years occurred in all provinces as birth rates began to fall in the mid-1950s. The most spectacular change took place in Quebec where the rate of growth declined by about 70% between 1951-56 and 1966-71 (i.e. from 14.1% to 4.3%). The growth rate in Quebec in 1966-71 was less than half of the rate during the preceding five-year period.

The slow population growth of 1966-71 was not shared equally among the provinces. The lowest rates occurred in the Atlantic Provinces, Quebec, Manitoba and Saskatchewan. Saskatchewan registered an actual decline in population during this period. British Columbia had the highest growth rate (16.6%) in 1966-71, followed by Alberta and Ontario. The uneven rates of increase among the provinces in 1966-71 imply that during this period net migration reinforced the natural growth of population in Ontario, Alberta and British Columbia and depressed it in all others (see Table 4.5).

Provincial estimates, 1973. In addition to the five-year census counts, estimates are constructed for the total population of Canada and for each province on both an annual and quarterly basis. The estimates of population begin with the preceding census counts, to which are added the births of each year and from which the deaths are subtracted; immigrants are added and an estimate of emigrants subtracted. Family allowance statistics showing the number of migrant families by province are used in estimating interprovincial shifts in population. Finally, the next succeeding census serves as a basis for revision of all annual estimates of each intercensal period.

Table 4.6 shows the revised annual population estimates by province for the years 1967 to 1970, and the provisional estimates for 1972 and 1973. Included in the table are the actual enumerated counts for the two "benchmark" census years of 1966 and 1971. The estimate for Canada of 22,095,000 population at June 1, 1973 is the result of adding 351,000 births and 130,000 immigrants to the previous 1972 estimate of 21,830,000 and then subtracting 163,000 deaths and a residual of 53,000 representing mainly emigrants.

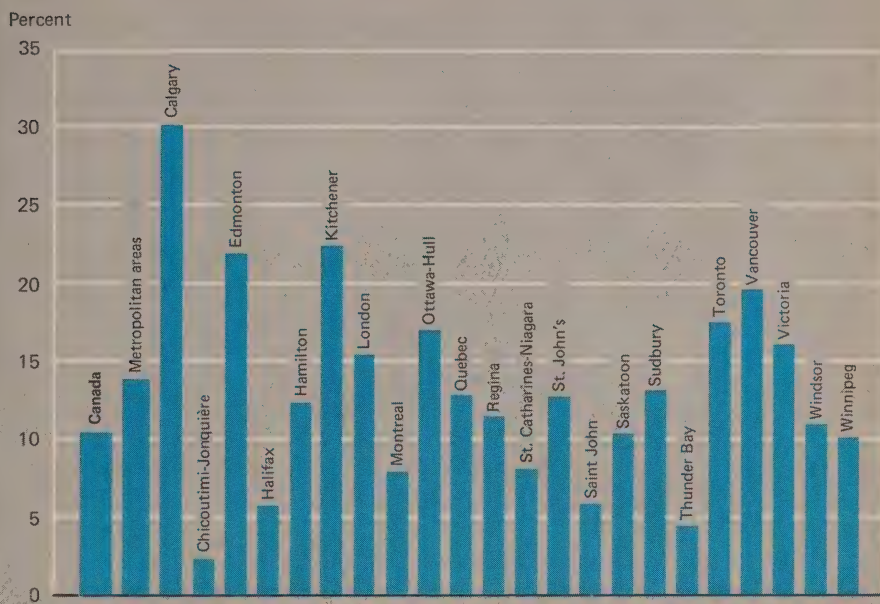
Cities, towns and villages. As at June 1, 1971, some 65.4% of Canada's population lived in 2,120 centres classified as incorporated cities, towns and villages. These are grouped into 13 broad size categories in Table 4.7. There were only two cities within whose incorporated boundaries the population was over 500,000 (Montreal and Toronto), representing a combined 8.9% of the total population. At the other end of the scale, 1,093 or one half of all incorporated cities, towns and villages had less than 1,000 population, but together they accounted for only 2.1% of Canada's population.

Canadian cities and towns having a population of over 50,000 in 1971 are listed in Table 4.8 together with figures for 1961 and 1966. The date of incorporation to their present status of a city or town is indicated also. Since the population counts for the three census periods relate to the incorporated limits of the city or town at each of these dates, the growth figures are not strictly comparable in those instances where boundary changes due to annexations, etc., have taken place. Asterisks in the table indicate all cases where such changes have occurred.

Metropolitan areas. For census purposes a metropolitan area represents the main labour market of a continuous built-up area having a population of 100,000 or more. The growth of each of the 22 census metropolitan areas can be observed over the period 1951-71 in Table 4.9 where the populations of these areas in earlier censuses have been adjusted to conform to the boundaries delineated for the 1971 Census. For many purposes these figures, which essentially measure the size of Canada's major urban agglomerations, are more meaningful than the data relating only to the incorporated limits of the central cities shown in Table 4.8.

The proportion of Canada's population living in the major metropolitan centres has been steadily increasing in recent years to the point where over one half (55.1%) now reside within the boundaries of the 22 metropolitan areas as defined for the 1971 Census. Calgary showed the highest rate of growth in the most recent period (1966-71) at 22.1%, followed by Edmonton at 16.5%. However, the greatest actual gains were registered by Toronto which increased by 338,000 and by Montreal which gained 172,000. At the same time, Vancouver joined these

Percentage increase of the population of Canada and the metropolitan areas, 1966-73



two metropolitan centres in becoming the third urban agglomeration in Canada to pass the 'over-a-million' population mark.

Because of the growing interest in the expanding population of the larger metropolitan areas of Canada, a series of intercensal estimates was begun in 1957. Table 4.9 includes these estimates for 1973 along with the census counts of 1951-71. As in preparation of intercensal population estimates for provinces, the births occurring in the metropolitan areas between June 1, 1971 and June 1, 1973 were added to the population at the census date and deaths subtracted. Immigrants over this period reporting these metropolitan areas as places of destination were added and allowances made for losses in population by emigration. Also, the net in-movement caused by internal migration was calculated from family allowances and other data.

4.2.2 Population density

At six persons a sq mile in 1971, Canada's crude or average population density still ranks among the lowest in the world. Table 4.10 shows that if the Yukon Territory and Northwest Territories were omitted from this calculation, there would be 10 persons a sq mile in 1971 compared to eight in 1961 and six in 1951. However, such average density figures over all types of land terrain and open spaces in the country or in individual provinces obscure the high urban densities which can reach close to 20,000 persons a sq mile as in the over-all figure for the cities of Montreal and Toronto. Moreover, the highest provincial densities are not necessarily found among the provinces with the largest populations. For example, the highest average density of any province is that of Prince Edward Island (51 persons a sq mile), which has the smallest population and represents an anomaly resulting from its very limited land area rather than from heavy concentrations of population. In contrast, the far more populous province of British Columbia, with its vast mountainous regions and areas of sparse population, has an average density of only six persons a sq mile.

4.2.3 Urban and rural

The urban population was defined in the 1971 Census as all persons living in incorporated cities, towns and villages with a population of 1,000 and over, as well as in unincorporated places of 1,000 and over having a population density of at least 1,000 a sq mile. Also considered as urban were the built-up fringes of these cities, towns and villages if they met the same criteria of population and density. All the remaining population was classified as rural.

Table 4.11 indicates that over three quarters (76.1%) of Canada's population is living in an urban environment, with the degree of urbanization on a provincial basis ranging from 38.3% in Prince Edward Island to 82.4% in Ontario. In comparison with the national average, only two provinces — Ontario and Quebec — were more highly urbanized. The proportion of urban population fell below 50% in just one case — Prince Edward Island.

The rural population, which accounted for 23.9% of the Canadian total in 1971, is further classified in Table 4.11 as either non-farm or farm. The rural farm population is defined for census purposes as those persons living in rural areas on an agricultural holding of one or more acres with sales of agricultural products amounting to \$50 or more in the previous year. Under this definition, the category of rural non-farm in 1971 accounted for 17.3% of the total population, compared to 6.6% for the rural farm segment.

4.3 Demographic and social characteristics

This Section provides data on the general demographic and social characteristics of the population which were available at the end of 1973 from the most recent 1971 Census of Canada. In certain instances, comparisons with earlier census periods are included. Where they are not, such figures can generally be obtained from the relevant reports of previous censuses.

4.3.1 Sex, age and marital status

The age and sex composition represents the most fundamental of the attributes of a given population. Along with marital status, these variables are primarily a function of vital trends; births, deaths, marriages, and dissolutions of marriages. Social and economic factors, by their effects on vital events and migration, influence these characteristics as well. An unbroken series of census data is available as far back as the first Census of Canada in 1871, although only recent trends are summarized here.

Sex ratios. The relatively short demographic history of the Canadian population has been characterized by an excess of males, although this excess has nearly disappeared in recent years. Over the past century the sex ratio (i.e. number of males per 100 females) for Canada reached a peak of 113 in 1911 following a decade of heavy immigration in which males have traditionally predominated. By 1971 the sex ratio had almost evened out at 100.2 which represented only 22,425 more males than females in a total population of over 21.5 million (Table 4.12). In the older settled provinces east of Manitoba the sex ratio has varied between Nova Scotia's 104 in 1911, and Quebec's and Ontario's 1971 ratio of 99. In the western provinces, which were being rapidly settled in the early years of this century, the sex ratio has ranged between Alberta's 1911 high of 149 and Manitoba's 1971 figure of 100.

Age structure. The age composition of the Canadian population is, of course, a reflection of past trends in vital rates and immigration. The lower birth rates of the 1961-71 period compared to those of the 1950s have had a tremendous impact on the population under 15 years of age in 1971. This age group decreased by 211,000 or 3.2% between 1966 and 1971 compared with a gain of 399,800 or 6.4% in the 1961-66 period. As a result the proportion that this age group formed of the total population fell from 34.0% in 1961 to 29.5% in 1971 (Table 4.13).

The population of working age (generally regarded as those 15-64) increased substantially, with a gain in excess of 1,559,000 or 13.1% in the 1966-71 period. This age group comprised 62.3% of the total population in 1971 compared with 59.4% of the total population in 1966 and 58.4% in 1961. Of the total 1961-71 increase in the 15-64 age group, 49.8% of the gain occurred in the 15-24 age group. This young adult age group in 1971 is, of course, the cohort of children born in the high-birth-rate years following World War II. The proportion of persons 65 years of age and over was approximately the same (roughly 8%) in 1971 as in 1961 and 1966.

Percentage distribution of the population of Canada,
by 5-year age groups and sex, 1961 and 1973



The latest estimates of the population by age group and sex are shown in Table 4.14 for Canada and the provinces as at June 1, 1973. The method followed in preparing these estimates was much the same as that used in calculating the population estimates described in Section 4.2.1. These estimates are subject to revision when data from the next census in 1976 become available.

Marital status. Analyses of the trends and size of the single, married, widowed and divorced segments of the population assume their most revealing aspects when these categories are observed in relation to their distributions at different age levels and by sex. Table 4.15 shows these three fundamental demographic characteristics in relationship to each other, based on results of the 1971 Census. The figures show, for example, such imbalances as the far greater numbers of single males than single females at the younger age levels and the reverse for widows as compared to widowers in the older age groups. The former condition results from the generally earlier ages of marriage for females, and the latter is due to the longer life expectancy of females as well as the greater tendency for widowers to remarry.

Among the recent trends in the marital status structure is the steady decrease, since 1951, in the number of married females in the child-bearing ages in relation to the total married women of all ages. This is possibly one of the contributing factors to the sharply declining birth rates in recent years. In 1971, 59.7% of all married females were in the age group 15-44, compared to 61.2% in 1966, 62.9% in 1961, and 64.0% in 1951.

One of the most striking changes revealed by the 1971 Census compared to the previous one in 1966 is the large increase in the number of divorced persons over the 1966-71 period, reflecting in part recent relaxations in the divorce laws. Divorced persons of all ages in 1971 increased to almost three times the size of the 1966 figure (from 64,776 to 175,115). The age group 15-24 experienced the greatest relative increase, but the actual numbers were small compared to most older groups. Moreover, the total number of divorced persons still represented fewer than 1% of Canada's population in 1971. (See also Section 4.8.2.)

4.3.2 Language

In the 1971 Census, three questions were asked on the languages of the Canadian people. Two of these represented the more traditional census inquiries: one on mother tongue (the language first spoken in childhood and still understood) and the other on official language (the ability to speak English, French, or both languages). These were augmented in 1971 by a third question concerned with the language most often spoken at home.

Mother tongue. Summary figures on mother tongue are presented in Table 4.16 which shows the principal languages reported under this concept at the 1971 Census with comparative figures for 1961. It may be noted that the proportion of the Canadian population reporting English mother tongue increased from 58.5% in 1961 to 60.2% in 1971, while the percentage reporting French declined from 28.1 to 26.9. Italian, Greek, Chinese, and Portuguese were others showing significant advances in the 10-year period, while Ukrainian, German, Netherlands, Polish and Yiddish were among the larger groups registering declines.

In addition to providing information on the basic linguistic affiliations of the Canadian people, mother tongue data obtained at decennial censuses form the statistical basis for the creation of Bilingual Districts under the Official Languages Act. For this reason, Table 4.17 is of interest in showing the number and proportion of the population reporting English or French as their mother tongue, by province. The relative gains in English mother tongue over the 1961-71 period occurred mostly in the western provinces at the expense of other mother tongues such as Ukrainian, German and Polish, as the descendants of earlier immigrants now report English as their mother tongue to a greater extent than in previous decades.

Official language. Table 4.18 shows 1971 Census figures on the population reporting the ability to speak one or both of Canada's two official languages, with comparative data for 1961. This table indicates that in 1971 a total of 67.1% were able to speak English only, 18.0% French only, and 13.4% were bilingual. These ratios represent a slight increase in the proportion of the population able to speak both English and French over 1961, when the percentage was 12.2.

Language spoken in the home. The new inquiry on language most often spoken at home was introduced in the 1971 Census on the recommendation of the Royal Commission on Bilingualism and Biculturalism and other groups. It adds a new dimension and insight into the languages of Canada since some persons, particularly immigrants, do not use either of the two

official languages as the one they speak most often in their homes. Conversely, many others with a non-English mother tongue may no longer employ their mother tongue for this purpose. Final results of the 1971 Census in Table 4.16 indicate that 67.0% of the population spoke English most often in their homes, whereas only 60.2% reported English as their mother tongue.

4.3.3 Ethnicity, religion, birthplace

A population made up of diverse ethnic groups, religious affiliations and countries of birth gives rise to political, social and economic problems quite different in nature from a country with a more homogeneous composition. It is equally true that different backgrounds lend variety and diversity to the national life. Because of the varied nature of Canada's population, the measurements provided by decennial censuses on such subjects as ethnic and religious composition are of widespread interest and in continuous demand. Tables 4.19 to 4.21 show summary figures on these subjects from the 1971 Census, with comparative data for earlier years.

Ethnic groups. The ethnic composition of the population of Canada has changed considerably over the years because of many factors, including differences in the flow and source of immigrants. Trends in recent years have been characterized by a gradual decline in the proportions of British Isles groups and a corresponding increase in European ethnic groups other than French. For example, the former groups had dropped from 57.0% of the total population in 1901 to 44.6% by 1971, whereas other European groups rose from 8.5% to 23.0%. The French ethnic group remained relatively stable, starting at 30.7% in 1901, and moving irregularly lower to 28.7% by 1971. Table 4.19 provides 1971 figures for the larger ethnic groups in Canada, together with earlier data from the two previous decennial censuses in 1951 and 1961.

Religious denominations. Census figures on religious denominations do not measure church membership or the degree of affiliation with a particular religious body. Respondents were requested to answer the question "What is your religion?" and to enter if possible a specific religious denomination, sect or community. Thus, the census data on this subject relate to the religious denominations to which persons state they belong, adhere or favour, with the opportunity to report "no religion" if so desired. As shown in the 1971 figures in Table 4.20, three out of every four persons in Canada in 1971 reported one of the three numerically largest denominations — Roman Catholic, United Church or Anglican. Largest relative gains since 1961 occurred in such groups as Jehovah's Witnesses and Pentecostal. None of the major denominations registered actual declines in the 1961-71 period, but the Anglican, Baptist, Lutheran, Presbyterian and United Church groups were among those showing losses relative to the total population.

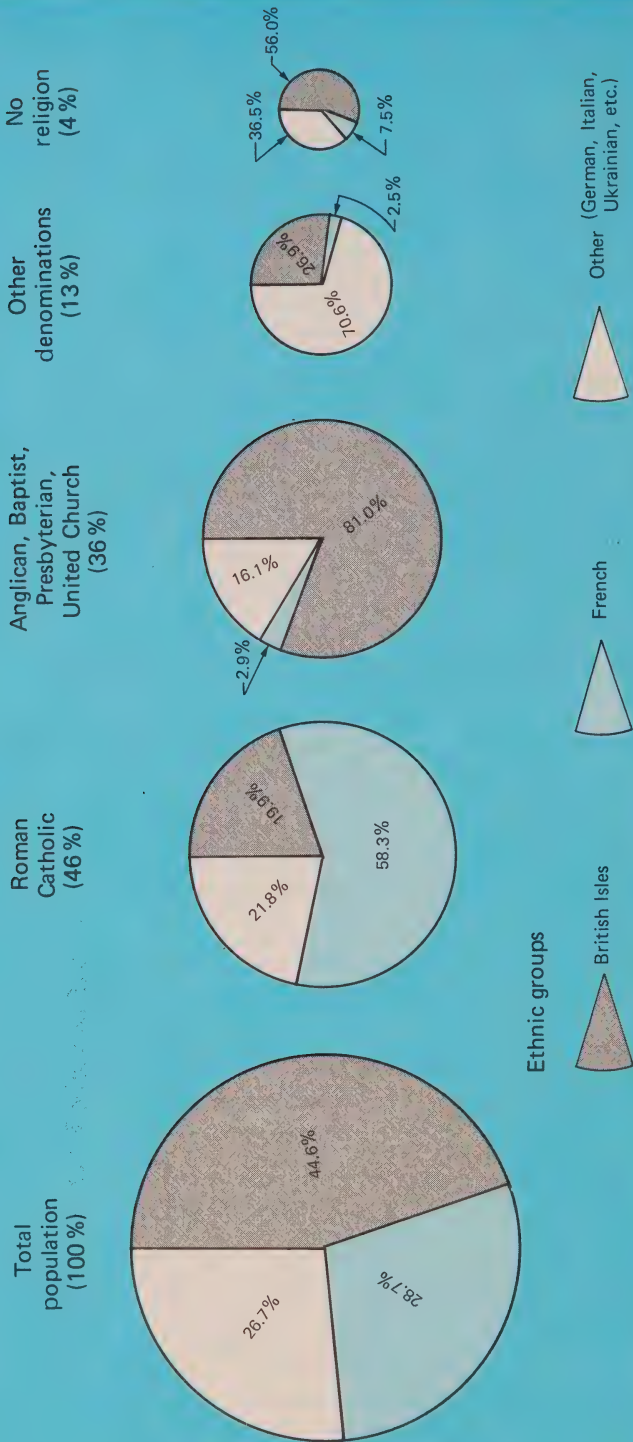
Country of birth. The proportion of the population born outside Canada has ranged during the present century from a high of 22% throughout the period 1911-31, following the heavy waves of immigration in the early decades, to a low of 15% in 1951 following a period of lower immigration and rising birth rates. Persons born in the United Kingdom comprised over 11% of the population in 1911 and 1921, but this percentage declined gradually to 4.3% by 1971 in the face of the rising proportions of Canadian-born and immigration from other European countries. Persons born in the latter countries rose from 5.6% of Canada's population in 1911 to 7.8% in 1971 (Table 4.21).

4.3.4 The native peoples

Many centuries before the first European settlers arrived on what is now Canadian soil, this vast country had received immigrants in the prehistoric period. Present-day Eskimos (Inuit) and Indians are the descendants of these early settlers but as a result of heavy immigration by other groups they now represent less than 2% of Canada's population. Administration relating to the affairs of the Indian and Inuit peoples is described in Chapter 3. Demographic data on their numbers and locations can be obtained from reports of the 1971 Census of Canada, in which summary figures show a total of 295,215 Indian people and 17,550 Inuit. The former figure includes both registered Indians (231,000) and non-registered (64,000).

From a later source, there were 270,494 persons registered as Indians by the Department of Indian Affairs and Northern Development as of December 31, 1973. These are persons who are entitled to be so registered in accordance with the terms of the Indian Act. They comprise 565 bands who occupy or have access to some 2,200 reserves having a combined area of

Percentage distributions of the population by specified religious and ethnic groups, Canada, 1971



about 6.3 million acres. Membership of these bands is distributed among the provinces and territories as shown in Table 4.22. The 29 Indian bands in the Yukon Territory and Northwest Territories are located in 59 settlements that have not been formally designated as reserves. No permanent residents of Newfoundland are registered under the Indian Act.

About two thirds of Canada's roughly 18,000 Eskimos reported in the 1971 Census live in communities in the Northwest Territories (11,400), and the remainder mainly in Arctic Quebec (3,800), Labrador (1,000), and Northern Ontario (800). As in the rest of Canada, the Eskimo birth rate has been declining in recent years, but at a faster rate and from a much higher level. By 1971 the birth rate for the Eskimo population in the Northwest Territories had decreased to about 38 per 1,000 as compared with the Canadian average of 17 per 1,000.

4.4 Households and families

This Section relates to some of the basic statistics on households and families collected in the 1971 Census. More detailed information may be found in the 1971 Census reports. Of particular interest will be the reports pertaining to households and families to be published in a series of profile studies of Canada's human resources as part of Volume V of the 1971 Census.

4.4.1 Household size and types

A household, as defined in the census, consists of a person or a group of persons occupying one dwelling. It usually consists of a family with or without lodgers, employees, etc. However, it may consist of a group of unrelated persons, of two or more families sharing a dwelling, or of one person living alone. The statistics presented in this Section pertain to private households only. Collective households such as hotels, motels, institutions of various types (usually considered to contain 10 or more unrelated persons) have been excluded because their significant dissimilarities from private households could distort the household picture with respect to size and composition.

The number of private households in Canada increased to 6 million in 1971 from 4.5 million a decade earlier, a gain of almost one third. The corresponding population rate of increase was considerably lower at 18%. This difference in growth rates reflects the marked rise in recent years in the number of households consisting of only one or two persons. Generally speaking, the distribution of households by province in 1971 closely paralleled the population distribution: Ontario had the greatest number of households at 2.2 million, followed by Quebec and British Columbia which had 1.6 million and 668,000 households, respectively.

Households by size. Table 4.23 shows the total number and the average size of households by province for the census years 1961, 1966 and 1971. In the 1971 Census, the average size of Canadian households was 3.5 persons as compared to 3.7 persons in 1966 and 3.9 persons in 1961. In all these censuses, the average number of persons in each household was highest in Newfoundland. While the decline in the average size of households during the period 1961-66 was attributable to mainly two provinces, New Brunswick and Quebec, a further drop in the average size during the period 1966-71 was realized in all provinces.

Households containing families. All private-type households are divided for census purposes into two basic categories: family households and non-family households, depending upon whether or not there is a family (or families) present in the household. Table 4.24 shows the distribution of households on this basis for census years 1961, 1966 and 1971.

Family households, although they increased in number from 3.9 million in 1961 to almost 4.4 million in 1966 and to 4.9 million in 1971, proportionately dropped from 86.7% in 1961 to 84.5% in 1966 and to 81.7% in 1971. The proportion of households consisting of two or more families dropped from 3.7% in 1961 to 2.0% in 1971, which is usually an indication of a decrease in the incidence of over-crowding in households. On the other hand, non-family households increased both in number as well as in proportion to the total number of households. This increase is solely attributable to the increase in the proportion of one-person households from 9.3% in 1961 to 11.4% in 1966 and 13.4% in 1971. Thus, new family formation alone was not responsible for the over-all increase in the number of households; some family persons and families who previously shared accommodation with other families now maintained their own households.

Households by age and sex of head. The distribution of household heads by age and sex for the census years 1961, 1966 and 1971 is given in Table 4.25. Of particular interest is the up-

ward trend in households headed by young males of under 25 years of age. Although total households increased by 16.6% between 1966 and 1971, the number of households with heads under 25 years of age grew by 54.0%, reaching 414,470 in 1971 from 269,065 in 1966. By province, this group increased by as much as 72.6% in Manitoba and 63.0% in Newfoundland. Quebec registered the largest growth in the number of households with heads 70 years of age and over, increasing 17.5% to 125,095 in 1971 compared to 106,459 in 1966. Nationally, however, the proportion of households with heads 70 and over declined slightly to 10.3% of all households from 10.7%.

4.4.2 Family size and composition

A family, as defined in the Canadian census, consists of a husband and wife with or without unmarried children, or a parent with one or more unmarried children, living together in the same dwelling. Adopted children and stepchildren have the same status as own children.

The number of families in Canada increased to 5.0 million in 1971 from 4.5 million in 1966 and 4.1 million in 1961, a gain of approximately one fourth over the decade. Following the patterns of provincial population growth, and particularly reflecting the factors of migration, the largest rate of increase in the number of families occurred in British Columbia (35.4% in the 1961-71 period), followed by Alberta (25.0%), and Ontario (24.5%).

Families by size. The total number and average size of families are given in Table 4.26 by province for the census years 1961, 1966 and 1971. Although the average size of the Canadian family remained the same at 3.9 persons between 1961 and 1966, it dropped to 3.7 persons between 1966 and 1971 as declines in birth rates across the nation began to be reflected in census family-size trends. Quebec and New Brunswick experienced the largest reductions in average family size, decreasing from 4.2 persons in 1961 to 3.9 in 1971 for Quebec, and from 4.3 to 4.0 for New Brunswick.

Families maintaining own households. Families "maintaining their own households" are those in which the head of the family is also the head of the household. Families not maintaining their own household fall into two census sub-categories: families related to the head of the household, and non-related lodging families. The few who do not fit either of these sub-categories are mostly families of employees living in their employer's household.

As can be seen from Table 4.27, 96.6% of the Canadian families in 1971 maintained their own households. These families increased over earlier censuses both in number as well as in proportion to the total number of families. The majority of the remaining families were related families, characterized by the fact that they were mostly small in size, usually two persons (e.g. the daughter and son-in-law of the household head) and the head of the family was under 25 years of age. On the other hand, lodging families, although increasing slightly in number, constituted a very low proportion of 0.8% unchanged from the 1966 Census.

Husband-wife families. For the analysis of family data, a useful classification is the subdivision into husband-wife families and one-parent families. Table 4.28 shows the distribution of both types of families by age of family head. In the case of one-parent families, the age of head is further classified into male and female heads. In the case of husband-wife families, this type of subdivision is not necessary, since for statistical tabulating purposes, the husband was considered to be the head of the family in 1971 and earlier censuses.

Although between 1966 and 1971 the proportion of husband-wife families dropped slightly, in actual number they increased. They still constituted a predominant proportion (90.6%) of total Canadian families. On the other hand, as can be seen from Table 4.28, the majority of one-parent families were headed by females. During the decade 1961-71, these families increased both in number and proportion from 6.6% in 1961 to 7.4% in 1971. This reflects a slight increase in the incidence of "broken" families in Canada because the proportion of females heading such families increased in the age groups 25-34 and 35-44, and these are the ages in which divorces most frequently take place.

Families by mother tongue of head. Table 4.29 shows the distribution of families by the mother tongue of family head for Canada and the provinces. For census purposes, mother tongue is defined as "the first language learned that is still understood". As might be expected, the proportion of family heads reporting English or French mother tongue in the 1971 Census showed a fairly similar pattern to that for the population as a whole. For example, 60.2% of the Canadian population reported English as the mother tongue, as compared with

57.2% of all family heads. The corresponding proportions for French mother tongue were 26.9% and 25.6%. However, mother tongues other than English or French were reported by only 13.0% of the total population, but by 17.2% of all family heads.

Children in families. There were 8.8 million children in families in 1971. These are limited by definition to children never married and under 25 years of age who were living with their parents or guardians at the time of the census. The above number of children are classified in Table 4.30 into selected age groups which roughly correspond to pre-school-age children (under six years), those of elementary school age (6-14), those at the secondary school level (15-18), and those of college or working age (19-24).

Declining birth rates are reflected dramatically in the proportionate increases of children in families during the 1966-71 period. The 19-24 age group of children in families increased by 20.2% over the five years, the 15-18 group by 16.9%, the 6-14 group by only 5.8%, while those under six years of age declined by as much as 16.2%. Children in families for all age groups combined advanced in numbers by 11.5% (7.8 million to 8.7 million) in the 1961-66 period, but by only 2.2% (8.7 million to 8.8 million) during 1966-71.

4.5 The vital components of population change

Vital statistics are an indispensable key to the interpretation of population change. They provide a measure of the pace at which the population is increasing by natural means (births minus deaths) and the rate at which women are marrying and reproducing. As such they do much to explain the changing patterns of population growth and composition described in earlier sections of this Chapter. These vital processes of population change are reflected in the statistics compiled from the records of births, deaths, marriages and divorces registered in the provinces and territories of Canada.

4.5.1 History of vital statistics

The history of the collection of vital statistics in Canada is described in the *1948-49 Canada Year Book* pp 185-188. Most trend tables on this subject in the present edition are for recent years back to 1951. An historical summary of vital statistics data for Canada and the provinces back to 1921 is contained in the Vital Statistics *Preliminary annual report* (Catalogue No. 84-201). Some rough estimates of birth, natural increase, and death rates back to the mid-1800s by 10-year periods are contained in Sections 4.6.1, 4.6.3 and 4.7.1, respectively.

4.5.2 Summary of principal data

Table 4.31 provides a summary of the principal vital statistics for 1971 and 1972 for Canada, the provinces and territories, with comparative figures by five-year periods back to 1951-55. Table 4.32 shows similar data for urban centres of 50,000 population and over for 1972 with comparative averages for 1966-70 and 1961-65. More detailed information on all aspects of current vital statistics as summarized in these tables, including analyses of recent trends, appears in the annual report *Vital statistics of Canada* (Catalogue No. 84-202), *Causes of death* (Catalogue No. 84-203), and in other regular and special reports. In addition, certain unpublished data are available on request.

4.6 Fertility

Of all the various interactions of the demographic factors which produce population change (fertility, mortality, nuptiality, immigration, emigration), none exerts greater influence than the rate of reproduction or fertility. By comparison, the nation's death and immigration rates have become far more stable and it is the birth and fertility rates that will continue to be the dominant factor in the foreseeable future in shaping the demographic structure of Canada (see Section 4.1).

4.6.1 Births

No accurate figures on Canadian crude birth rates are available prior to 1921 when the annual collection of official national figures was initiated. However, the following rough estimates of the average annual crude rates of live births (i.e. per 1,000 total population) for each 10-year intercensal period between 1851 and 1921 may be inferred from studies of early Cana-

dian census data: 1851-61, 45; 1861-71, 40; 1871-81, 37; 1881-91, 34; 1891-1901, 30; 1901-11, 31; 1911-21, 29.

The general trend in the national crude birth rate since 1951 is shown in Table 4.31. The annual rates declined gradually but steadily from 29.3 in 1921 to a record low of 20.1 in 1937, recovered sharply in the late 1930s and during World War II to 24.3 in 1945. Following the war the birth rate rose to a high of 28.9 in 1947. Between 1948 and 1959 the rate remained remarkably stable at between 27.1 and 28.5, but has since declined dramatically to reach a record low of 15.9 by 1972.

The rates for most provinces as shown in Table 4.31 followed trends very similar to the national trend but exhibited some regional differences in recent years. Although all provinces had record high rates immediately following World War II, during the 1951-55 period average birth rates in Ontario and the western provinces were higher than during 1946-50 and those for Quebec and the Maritime Provinces were lower. In fact, Ontario, Alberta and British Columbia had record high crude birth rates during the 1956-60 period. By 1972 all provinces had record low rates.

Since these crude birth rates are based on the total population they do not reflect the true fertility of the women of reproductive ages in the different provinces. A more accurate measure of the true birth rate is one based on the number of women between the ages of 15 and 45 (see Table 4.39 and Section 4.6.2).

Sex of live births. With rare exceptions, wherever birth statistics have been collected they have shown an excess of male over female births. The number of males to every 1,000 females born in Canada has averaged around 1,057 since the middle 1930s. Provincial sex ratios vary much more widely because of the relatively fewer number of births involved — the smaller the total number of births, the greater the chance of wide sex-ratio variations from year to year. In 1972, 1,061 male infants were born in Canada for every 1,000 females.

Age of parents. The distribution of legitimate live-born infants born in 1972 by age of the parents is given in Table 4.33, as well as of illegitimate infants by age of mother. This table shows that over two thirds of the births in 1972 to married mothers were among 20-29-year-olds, another 15% to 30-34-year-olds, and only about 8.5% of births were to married mothers under 20. By contrast, 47% of the illegitimate births were to unmarried mothers under 20, and an additional 32% to 20-24-year-olds.

Order of birth. Table 4.34 shows the order of birth of all live-born infants in 1972 according to the age of the mother. As would be expected, 32,904 or four out of every five of the 39,640 infants born to mothers 15-19 years of age were the first live-born child, whereas about half of the children born to mothers of 20-24 years were their second or later live-born child. In 1972, 297 infants were born to mothers who had not yet reached their 15th birthday.

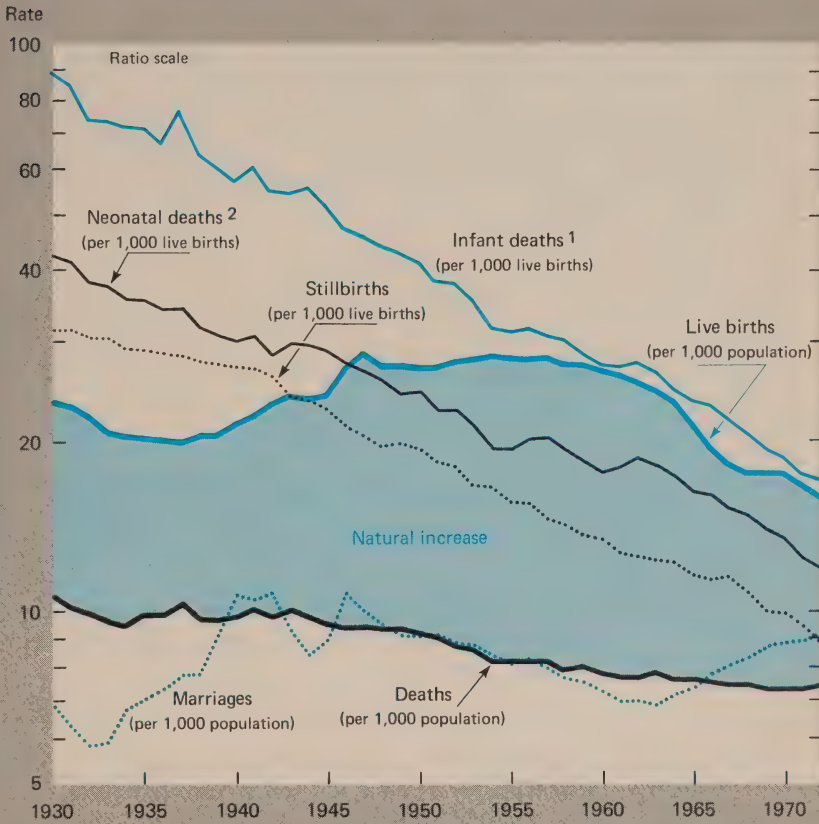
Table 4.35 summarizes the pattern of family formation since 1951 and shows that the percentages of first and second children have been increasing in recent years. This has been accompanied by a reduction in the proportion of third and higher birth orders.

Illegitimacy. Concurrent with the declining birth rate, the proportion of the live births in Canada which were "illegitimate" (i.e. births in which the parents reported themselves as not being married to each other at the time of the child's birth, and in Ontario those in which the mother was reported as "single" at the time of birth) has been rising in recent years (see Table 4.36). In 1956 illegitimate births constituted only about 4% of all live births; by 1972 the proportion had risen to 9%. In the Yukon Territory and Northwest Territories, almost one of every four births in 1972 was considered as illegitimate. Of the provinces, Saskatchewan and Manitoba had the highest percentages at 14.5 and 13.0, respectively.

Stillbirths. The 3,046 stillbirths of at least 28 weeks gestation that were delivered in 1972 represented a ratio of a little under nine for every 1,000 fetuses born alive. As is evident from Table 4.37, the stillbirth ratio has been decreasing steadily and has been cut by more than half over the past quarter-century. Ratios in some provinces have been reduced more than in others. The stillbirth ratio among unmarried mothers has been consistently higher than that among married mothers.

Table 4.38 illustrates the fact that the risk of having a stillborn child increases with the age of the mother. Although stillbirth rates for mothers of all ages have been declining, they continue to be much higher for older mothers than for younger ones.

Vital statistics rates, 1930-72



1. Deaths under one year of age.
2. Deaths within the first four weeks of birth.

4.6.2 Fertility rates

The sex and age composition of a population is a fundamental factor affecting its birth rates. Since almost all children born each year are to women between the ages of 15 and 45, variations in the proportion of women of these ages to the total population will cause variations in the crude birth rate of different countries, or of different regions within a country, even though the actual rates of reproduction or fertility of the women in these age groups are identical. It is therefore conventional practice to calculate what are termed age-specific fertility rates, i.e. the number of infants born annually to every 1,000 women in each of the reproductive age groups.

As might be expected, Table 4.39 indicates that women in their 20s are the most reproductive. On the average, for every 1,000 women between the ages of 20 and 25, 120 infants were born during 1972. Expressed another way, about one woman out of eight in that age group gave birth to a live-born infant. For the fourth consecutive year, women in the age group 25-29 had a higher rate (137) than those in their early 20s.

Another measure of fertility is obtainable from what is conventionally referred to as a gross reproduction rate. The gross reproduction rates shown in Table 4.39 indicate the average number of female children born to each woman living through the child-bearing ages. In other words, the gross reproduction rate represents the average number of females that would be born to each woman who lived to age 50 if the fertility rate of the given year remained

unchanged during the whole of her child-bearing period. A rate of 1.000 indicates that, on the basis of current fertility and without making any allowance for mortality among mothers during their child-bearing years, the present generation of child-bearing women would exactly maintain itself.

Canada has always had one of the highest gross reproduction rates among the industrialized countries of the world. Even during the period of low birth rates in the 1930s the rate varied between 1.300 and 1.500 and since World War II has ranged from 1.640 in 1946 to a high of 1.915 in 1959. However, since 1959, and particularly since 1964, the national gross reproduction rate has dropped sharply from 1.788 to 0.982 in 1972 — slightly below the replacement level of 1.000 for the first time in Canada's history. Among the provinces, Quebec, British Columbia and Ontario in that order, had the lowest gross reproduction rates in 1972, all below the replacement level.

4.6.3 Natural increase

The excess of births over deaths, commonly referred to as "natural increase" has been the main factor in the growth of Canada's population. Although the collection of Canadian birth and death statistics began only in 1921, some idea of the rate of natural increase in the early years back to the mid-1800s may be obtained from the estimates of births and deaths shown at the beginning of Sections 4.6.1 and 4.7.1, which produce the following natural increase rates (per 1,000 population): 1851-61, 23; 1861-71, 19; 1871-81, 18; 1881-91, 16; 1891-1901, 14; 1901-11, 18; 1911-21, 16.

During the 1920s and early 1930s the birth rate declined much more rapidly than the death rate and the natural increase rate dropped to a record low of 9.7 in 1937. Higher birth rates during and after World War II and a continued declining death rate caused the natural increase rate to rise steadily from 10.9 in 1939 to a record 20.3 in 1954. After that year there was a steady drop due to declining birth rates and the natural increase rate fell below 10 for the first time in 1971 at 9.5. It dropped still further to 8.5 in 1972. Table 4.31 gives average rates of natural increase in the provinces for five-year periods 1951-70 and for individual years 1971 and 1972.

4.7 Mortality

The Canadian crude death rate is one of the lowest in the world (7.4 per 1,000 population in 1972). After a continuous gradual decline over the past century, the rate appears to have levelled off since about 1967. In the opinion of demographers, further reductions in the crude death rate are likely to be small, and to affect primarily persons in the older age groups. Canadian mortality with special reference to infant deaths is discussed in this Section which also includes life expectancy figures compiled from recent death rates.

4.7.1 General mortality

No official crude death rates (i.e. rates per 1,000 total population) are available prior to 1921. However, studies of the early Canadian censuses have resulted in the following estimated annual crude rates for intercensal periods: 1851-61, 22; 1861-71, 21; 1871-81, 19; 1881-91, 18; 1891-1901, 16; 1901-11, 13; 1911-21, 13.

Typical of pioneer populations, Canada had high death rates in the mid-1800s when the country was still in its early stages of settlement. The crude death rate during that period is estimated as between 22 and 25. Although no data are available, it is assumed that while mortality was high at all ages, the rate among infants, children and young adults must have been particularly high. Even in 1921, for example, the Canadian infant mortality rate was still 102.1 per 1,000 live births. With increasing urbanization and improved sanitation and medical services, the crude rate dropped by 50% from 22 to 11 between 1851 and 1930. It continued to decline steadily to a low of 7.3 in 1970 and 1971, rising slightly to 7.4 in 1972.

Table 4.31 shows the trends in crude death rates since 1951 in the provinces and territories. The low rates shown for Newfoundland and Quebec are mainly due to the high proportion of young people in their populations, and the relatively high rates for British Columbia to the high proportion of elderly people in that province.

Table 4.32 shows the numbers of deaths in urban centres of 50,000 population and over in 1972, and the average deaths a year for the periods 1966-70 and 1961-65.

Age and sex distribution of deaths. Since 1921 when the collection of vital statistics was first instituted, the mortality trend at all ages has been downward. However, the principal factor in lowering the general death rate has been the reduction in the mortality of infants and children.

Table 4.40 shows that between 1951 and 1972, death rates for infants and for young children under 10 years of age dropped by 50% or more. Rates for the 10-14 group also declined steeply. However, rates for boys and young men from 15 to 24 were actually slightly higher than in 1951. Death rates for males over 25 were appreciably lower in 1972 than in 1951, except for men in the 65-74 interval, where there was little change. On the other hand, rates for females of all ages declined very substantially over the period between 1951 and 1972.

As shown in Table 4.41 covering the 1961-71 period, males under 40 accounted for 18.1% of all male deaths in 1961 but for only 13.6% of such deaths in 1971; in 1961, 16.4% of all female deaths were of persons under 40, a percentage that declined to 10.7 in 1971.

The sharp reductions in male infant and child mortality, and the substantial declines in the female rates for all younger age groups, have tended to raise the average age at death. Over the 1961-71 period the average age at death for males rose 3.6 years from 59.7 to 63.3, with the average age for females advancing 5.1 years, from 63.1 to 68.2. In the same period, the male median age at death rose only slightly, from 67.9 to 68.5, but the gain for females was 2.5 years, from 72.2 to 74.7. Thus, half the females who died in 1971 were more than 74.7 years old.

Causes of death. Table 4.42 presents details of the 1972 Canadian deaths and death rates based on 50 causes as given in the International Abbreviated List (International Classification of Diseases, 8th Revision). Of the 162,413 deaths occurring in 1972, 79,781 or over 49% were due to cardiovascular diseases, i.e. to ailments of the heart and circulatory system. Cancer accounted for 32,265, or 19.9%, accidents for 12,825 or 7.9%, and respiratory ailments for 10,787 or 6.6%. Combined, these four causes were responsible for 135,658 deaths, or 83.5% of the total.

The proportion of older people in the population has been rising in recent years. Consequently, cancer and cardiovascular diseases account for a larger proportion of all deaths than formerly. On the other hand, deaths of infants, children and young adults from such diseases as pneumonia and tuberculosis have sharply declined.

Table 4.43 shows that the leading causes of infant mortality are radically different from the main causes of death at later periods. Accidents are the primary cause of death for males between one and 44 years of age. The majority of deaths among older males are due either to cardiovascular diseases or to cancer.

Accidents are also the primary cause of mortality among girls, with cancer being the leading cause of death of young and middle-aged women. Cardiovascular diseases and cancer, in that order, are the leading causes of death for elderly women.

4.7.2 Infant mortality

Table 4.44 shows that mortality rates for both male and female infants (under one year of age) have been reduced by more than half since 1951. For example, if the 1951 death rate had remained unchanged until 1972, there would have been 13,372 infant deaths in that year, rather than 5,938. The improvement is due to many factors including better prenatal and postnatal care, improved sanitation, the use of antibiotics and higher living standards. In recent years, also, older women (a high-risk group) have been having fewer babies.

The 1972 provincial mortality rates for infants of both sexes ranged from 15.3 for Ontario to 20.7 in the case of Newfoundland, with the rates for the territories being substantially higher. The national death rate for all infants was 17.1 the lowest on record, with all provinces but New Brunswick and Manitoba recording the lowest infant mortality rates in their history.

Table 4.44 shows that male infant mortality in Canada over the past couple of years was 20-25% higher than the corresponding female mortality. Of 1,000 infant boys born alive in Canada during 1972, 19 failed to reach their first birthday, whereas for every 1,000 girl infants born alive there were only 15 fatalities by the end of the first year. Thus, while about 1,060 males are born for every 1,000 females, the higher male infant mortality reduces the excess to some extent during the first year.

Ages of infant deaths. As shown in Table 4.45, 4,117 or over 69% of the 5,938 infants who died during 1972 within a year of their birth died during the first four weeks of life, which is

conventionally called the "neonatal" period. Of the 4,117 neonatal deaths, 2,459 or nearly 60% died during the first day of life and 3,626 or 88% died during the first week. Deaths occurring during the hazardous neonatal period are caused mainly by conditions associated with pregnancy, difficult labour or congenital malformations. As in the case of total infant deaths, the Canadian neonatal death rate dropped by half since 1951, from 22.6 to 11.9 in 1972, with substantial improvements in all the provinces (see Table 4.44).

Causes of infant deaths. Of the 5,938 infants dying in 1972, 2,942 or close to 50% died of "perinatal" conditions of very early infancy (see Table 4.43). There were 1,132 deaths from anoxia or hypoxia (absence or deficiency of oxygen), and 694 due to immaturity of the foetus. Still in the "perinatal" mortality group, 543 deaths were ascribed to difficult labour or some disease or condition in the mother, and 308 to some condition of the placenta or umbilical cord. Congenital malformations accounted for an additional 1,330 deaths. Of the 603 deaths from respiratory diseases, 427 were due to pneumonia. Suffocation by food and other objects caused 210 infant deaths in 1972. Exactly half of the 194 infant deaths from infective and parasitic diseases were due to dysentery.

4.7.3 Life expectancy

Life tables are measures of life expectancy compiled from the death rates prevailing over a period. They assume that a given cohort of people (usually 100,000) are born simultaneously in a particular year and continue to be subject all their lives to the death rates prevailing in that year, or perhaps to the average death rates for, say, a three-year period centred around that year. The "expected" deaths in the cohort are calculated (in the case of a "complete" life table) for the first year of life, second year of life, etc., and the diminishing cohort is "followed" for 100 or more years until it has been virtually eliminated. Life expectancy at birth is calculated for the entire cohort and, subsequently, remaining life expectancy is calculated for the survivors at one year, two years, etc. It should be noted that the assumptions of such a life table are never fulfilled in practice and that the hypothetical cohorts in life tables do not represent any actual population. Usually, the persons in an actual cohort born in the life-table year will have a higher life expectancy than those in the life-table cohort because during their lifetimes public health conditions will presumably constantly improve and standards of medical care will also presumably advance.

Seven official sets of life tables have been published to date, based on deaths in the three-year period around each of the censuses of 1931, 1941, 1951, 1956, 1961, 1966 and 1971. The first five of these sets contained tables for Canada and for the five main regions, while the 1966 and 1971 sets included tables for all of the provinces. The Canadian life table values for the 1971 period are given for selected ages in Table 4.46. This table shows that at 1970-72 mortality rates 2,002 of 100,000 males born would have died in their first year with 97,998 surviving to one year of age, that 126 more would have died in their second year with 97,872 reaching their second birthday and so on. There would be 191 survivors at 100 years of age. The "probability of dying" column represents the ratio between the population at each age and the number of "expected" deaths in the coming year. Finally the "Expectation of life" column shows the number of remaining years of life that can be expected at each age, given the 1970-72 mortality rates.

Table 4.46 also shows that the male probabilities of dying were higher than the corresponding female probabilities throughout the table. Mortality rates and consequently the probabilities of dying were lowest at the age of about 10 for both sexes. Above this age, the male probabilities rose quite rapidly, reflecting accidents to teen-age boys; the female probability rose more gradually. Male mortality was fairly constant from the age of 20 up into the late 30s, and then increased steadily with advancing age. Female mortality rose slowly between the ages of 10 and 25 and then more rapidly for the remainder of the life period. It may be observed that about 11,200 of the male cohort would have died by age 50 as compared with roughly 6,600 of the corresponding female cohort, and that 58,575 males would reach age 70 as compared with 75,995 females.

Life expectancy values over the 1951-71 period are shown in Table 4.47. By 1971, Canadian life expectancy at birth had reached an all-time high of 69.3 years for males and nearly 76.4 years for females. These figures are roughly comparable to the expectancies of other countries with highly developed programs of medical care. Because of infant mortality, which is still quite substantial, life expectancies for male and female infants one year old were still

slightly higher than expectancies at birth. Male expectancy at age 20 was 51.7 years, or 6.5 years below the corresponding female expectancy of 58.2. At age 40, the comparative expectancies were 33.2 for men and 39.0 for women. By age 65, the male expectancy had dropped to 13.7 years, with the female expectancy being about 3.8 years higher, at 17.5 years.

Table 4.48 shows the life expectancies for five Canadian regions for 1951 and 1961, and the corresponding expectancies by province for the 1966 and 1971 periods. The steady widening of the gap between male and female expectancies, very evident at the national level, still seems to be continuing in every province to judge from the 1966 and 1971 period figures. For the periods around the 1956 and 1961 censuses, the Prairie region showed the highest life expectancies, both male and female. Throughout the 1951-61 interval, Quebec life expectancies were the lowest, although they showed marked improvement over the decade.

In both the 1966 and 1971 periods, Saskatchewan life expectancies at birth were the highest among the provinces for males and females alike, and Quebec expectancies, although increasing, were still the lowest. In 1971 the Saskatchewan male expectancy at birth (71.1 years) was about 2.8 years above the corresponding Quebec expectancy of 68.3. For female expectancies at birth, Saskatchewan set an all-time record of 77.6, about 2.3 years above the corresponding Quebec expectancy of 75.3. All the 1971 life expectancies for selected ages in each of the four western provinces as given in Table 4.48 were above the national average, with the Saskatchewan rates being the highest in every case. Ontario male rates at the younger ages were around the Canadian average, dropping slightly below it for older men. Ontario female expectancies were fractionally above the national level. Quebec male expectancies at the young and middle ages were roughly a year below the national average, with the difference decreasing for older men 65 years and over. This statement also applies to the female expectancies for that province.

In the Atlantic Provinces, 1971 life expectancies for the very young ages did not differ greatly from the national average except in the case of Nova Scotia for both males and females, which were somewhat below it, and Prince Edward Island females which were above it. This was also true for the expectancies at 20 years of age. The male expectancies at 40 were clustered around the Canadian figure with Prince Edward Island a little higher and Nova Scotia slightly lower. Prince Edward Island showed a female expectancy at 40 which was a year above the national average, while Newfoundland and Nova Scotia were slightly below it. The Prince Edward Island expectancies at age 65 were again somewhat above the Canadian level with the male expectancies at 65 for the other Atlantic Provinces clustered around it. The Newfoundland female expectancy at 65 was somewhat below the Canadian level.

4.8 Nuptiality

This Section includes not only recent statistics on marriages and marriage rates but also on dissolutions of marriages. In the *1973 Canada Year Book* pp 201-204, there was expanded coverage of the latter topic to focus attention on the dramatic increases over the past few years in the number of divorces resulting from the changes made in 1968 to Canada's divorce laws.

4.8.1 Marriages

In 1972 a record 200,470 marriages were solemnized in Canada. Table 4.49 shows that the rate of marriage had increased slightly from 8.9 per 1,000 population in 1971 to 9.2 in 1972, continuing the upward trend which began in the early 1960s. All provinces have lately experienced a similar trend in crude marriage rates. In 1972, New Brunswick recorded 10.0 marriages per 1,000 population which was the highest of any province.

Birthplace of brides and grooms. For Canada as a whole in 1972, Table 4.49 shows that 74.1% of the brides and 68.7% of the grooms were married in the province in which they were born; 11.9% of brides and 14.0% of grooms were married in a province other than that of their birth. Persons born outside of Canada constituted 14.0% of the brides and 17.3% of the grooms. There were significant variations in these percentages among the various provinces. For example, British Columbia always has the highest proportion of brides and grooms marrying persons born in other provinces than the province in which the marriage is performed. In terms of marrying persons born outside Canada, Ontario and British Columbia are both relatively high.

As also illustrated in Table 4.49, proportionately more brides tend to marry in the province of their birth than do grooms. Further, it is of interest that the proportions of both

brides and grooms marrying in the province of their birth are lowest in the territories, British Columbia, Alberta, Manitoba and Ontario. These are the regions which have generally been subject to the largest net inflows of population in recent years.

Age and marital status. Table 4.50 shows that in 1972 the great majority of brides and grooms at time of marriage reported their previous marital status as single, with divorced and widowed following in that order. A total of 177,155 or about 88% of all brides in 1972, and the same proportion of all grooms, had previously never been married. The proportion of brides marrying in 1972 who were previously divorced was 7.7%, and widowed, 4.0%.

In 1972 the median age at marriage — the age above and below which half the marriages occurred — was 22.5 for bachelors and 20.7 for spinsters. In terms of averages, bachelors averaged 24.8 years of age, and spinsters 22.6.

Religious denomination. Some indication of the influence that religion has in selecting marriage partners is shown in Table 4.51. For example, close to 62% of all marriages in 1972 were between persons of the same religious denomination. Percentages were higher for such denominations as Jewish, Roman Catholic and Eastern Orthodox, and lower for others such as Anglican, Baptist, Presbyterian and United Church.

4.8.2 Dissolution of marriages

The number of decrees absolute granted in Canada has risen sharply as a result of the 1968 changes in divorce legislation. For Canada as a whole the number of divorces (granted under the new legislation) averaged about 28,000 a year over the three-year period 1969-71 as compared to an average of about 11,000 divorces over the previous three-year period 1966-68. Preliminary data for 1972 in Table 4.31 indicate a further increase to over 32,000 decrees absolute granted in Canada. Table 4.31 also shows that in 1972 Alberta recorded a divorce rate of 227.8 per 100,000 population, and British Columbia 224.1. These were the highest rates among the provinces. By comparison, Newfoundland and Prince Edward Island recorded the lowest rates, at 33.3 and 57.5, respectively.

Sex of petitioners. Table 4.52 shows that almost twice as many divorces were granted in 1972 to female petitioners (20,694), as to males (11,670). This represents a ratio of 56 divorces to male petitioners for every 100 to females. Among the provinces, Alberta showed the lowest ratio of male petitioners (39 to every 100 female) while New Brunswick and Quebec had the highest (64).

Grounds for divorce. A cause for divorce can be mentioned singly in a decree or in combination with others. Table 4.53 indicates that in 1972 "separation for not less than 3 years" was the most frequent cause of divorce, accounting for 34.6% of all causes reported. This was followed by adultery (29.6%), mental cruelty (14.7%), and physical cruelty (13.0%).

Dependent children. Of the 32,364 divorces in 1972 granted under the new legislation, 44.2% involved no dependent children. Table 4.54 shows a gradual increase since 1969 in the proportion of divorces involving dependent children from 45.1% in that year to 55.8% in 1972. Almost 40% of the latter cases involved one child only, and one third, two children.

Duration of marriage. The length of marriage in 15% of the divorces in Canada in 1972 was less than five years, and in 42% it was less than 10 years. The short-term trend over the past four years indicates a relative shortening of the average marriage period before divorce. For example, Table 4.55 shows that in 1969 only 10% of the divorces involved marriages of less than five years duration and 31% to those of less than 10 years. The median duration of marriage for 1969 divorces was 14.9 years, as compared to 12.1 for those in 1972.

Marital status. Table 4.56 shows that more than nine out of every 10 persons divorced in 1972 were single at the time of their marriage, i.e. representing a first divorce. Slightly over 5% of the divorces were to persons who were divorced at the time of their last marriage, and about 2% to those who were widowed.

4.9 Migration

The preceding Sections 4.5 to 4.8 were concerned with the vital components of population change (fertility, mortality, nuptiality). In addition to these factors, there are the flows of population across national borders (immigration and emigration) which also affect the country's growth and demographic structure. This Section provides recent data on the numbers and

characteristics of immigrants entering Canada (Tables 4.57 to 4.63), as well as estimates of the numbers of emigrants leaving (Table 4.64). The relative influence of net migration (the excess of immigrants over emigrants) compared to natural increase (the excess of births over deaths) in past growth rates of Canada over the period 1851-1971 is shown in Table 4.2.

The subject of internal migration within Canada is discussed briefly in this Section, and some estimates of total net migration by province in the 1961-71 period can be observed from Table 4.5. Demographic studies resulting from the 1971 Census will provide detailed analyses of the most recent trends on internal migration flows within Canada as did the monographs from the 1961 Census relating to the preceding decade. Brief summary data from the 1971 Census on this subject are provided in Tables 4.65 to 4.67.

4.9.1 Immigration

The extent of immigration to Canada in any period is affected both by domestic conditions and by conditions abroad. A discussion of these factors, together with an analysis of recent trends, may be found in the *1972 Canada Year Book* pp 222-225. The numbers of post-war immigrant arrivals for each year over the period 1946-72 are shown in Table 4.57 of the present edition.

Origin of immigrants. In 1972 Canada received 122,006 immigrants from various countries of origin. This was almost identical to the 1971 total of 121,900, but represented a decrease of 25,707 or 17.4% from 1970. The reduction was a reflection, in part, of changing economic conditions in Canada and the increasing output of institutions of higher education which reduced the demand for skilled immigrants. Tables 4.58 and 4.59, showing the country of last permanent residence and of citizenship of immigrants, respectively, indicate that by world area the continents of Europe, the Americas, and Australasia contributed a lower proportion of the total immigration stream in 1972 than in the previous year. On the other hand, there was an increased percentage of immigrants from Asia and particularly from Africa.

For the second year in a row, United States was the largest source country of immigrants with 22,618 in 1972 — a drop from 24,366 in 1971. The United Kingdom was the next major source at 18,197 immigrants in 1972, representing an increase from 15,451 in 1971.

Destination of immigrants. Upon arrival in Canada, immigrants are asked to state their intended destinations. According to these records, Ontario absorbed by far the highest proportion of arrivals in the three-year period 1970-72 — 52.8% of all the males and 53.8% of all the females. Quebec was the second most-favoured province of destination, receiving 15.9% of the males and 15.3% of the females, followed by British Columbia with 15.7% of the males and 15.3% of the females. The proportions intending to settle in the Prairie Provinces were 12.4% for both males and females, and in the Atlantic Provinces, 3.0%. The provincial distribution as shown in Table 4.60 for 1971 and 1972 has changed little over the past two decades.

Sex, age and marital status. The sex distribution of immigrants for 1970-72 is shown in Table 4.61. In the five years 1968-72 adult males constituted 37.2% of the immigrants, adult females 37.9%, and children under 18 years of age the remaining 24.9%.

The number of female immigrants coming into Canada was higher than the number of male immigrants in every year from 1957 to 1964; since then, with the exception of 1969, 1971 and 1972, the trend has been in favour of males. In 1972, there was an excess of 1,866 females over males. Single males as shown in Table 4.62 surpassed single females by 4,581, but in all ever-married categories women outnumbered men: married females exceeded married males by 3,108; there were 3,435 widows compared to 526 widowers; divorcees outnumbered divorced men by 244; and separated females were 461 to 275 males. Of the total immigration for 1972 of persons 15 years of age and over, 39.5% were single, 53.9% married, and 6.5% were widowed, divorced or separated.

Intended occupations. Some 59,432 persons were added to the labour force in 1972 compared with 61,282 in 1971. The remainder — those not destined for the labour force — were largely dependents of immigrants or close relatives sponsored by individuals in Canada. Skilled immigrants continued to fill shortages of qualified people in certain areas, thus providing essential services to the Canadian public. For example, Table 4.63 shows that in 1972 Canada admitted 988 physicians and surgeons, 87 dentists, 674 medical and dental technicians and 1,432 other professionals in the health services field. Similarly, the labour force attracted 1,855 professional engineers (civil, mechanical, electrical, mining, etc.). Next to professional and tech-

nical occupations, the second largest group consisted of immigrants intending to work in the manufacturing and mechanical trades. Chief among these were tailors (3,274), mechanics and repairmen (2,732), and machinists (2,370). Other large occupational classes in 1972 were stenographers and typists (2,791) in the clerical group, domestic servants (2,723) in the service group, and farmers and farm workers (2,127) in the primary industry group.

4.9.2 Emigration

Emigration from Canada is a factor tending to offset to some extent present and past immigration activities. The major outward movement has always, of course, been to the United States and that movement, both of native-born Canadians and of Europeans who originally migrated to Canada, has attained considerable proportions at certain periods. No Canadian statistics on emigration are available but Table 4.64 gives figures taken from the annual reports of the Immigration and Naturalization Service of the United States Department of Justice. These figures show the numbers of persons entering the United States from Canada during the years ended June 30, 1962-72 with the expressed intention of establishing permanent residence in that country. They do not include persons travelling for pleasure, even for extended periods of time, holders of border-crossing cards (normally issued to persons living in border areas of Canada but working in the United States) or casual tourist crossings in these same areas.

Of the 10,776 Canadian-born persons entering the United States in the year ended June 30, 1972 with the intention of remaining permanently, 4,714 were males and 6,062 females. Approximately one fifth, or 2,196, of the total native-born emigrants were males in the productive age group, 20-59 years. By occupation, the largest group of the total of 10,776 native-born persons was the professional or technical group which numbered 1,437; clerical and kindred workers numbered 471; and craftsmen or foremen numbered 365. On the other hand 7,274 persons, or 67.5% of the total, were classed as housewives, children and others with no reported occupation. Altogether, 42.9% of the total were persons under 20 years of age.

Of the 18,596 persons entering the United States from Canada claiming Canada as country of last permanent residence — which of course includes native-born persons and those born in other countries who have resided in Canada — the Immigration and Naturalization Service of the United States Department of Justice lists 3,746 as professional, technical and kindred workers; 991 as craftsmen, foremen and kindred workers; and 869 as clerical and kindred workers. Housewives, children and others not in the labour force amounted to 10,129 or 54.5% of the total.

4.9.3 Internal migration

As people move from one place of residence to another within the nation's borders, they set up varying patterns of migration which differ in intensity and directional flow. These internal movements have marked effects on regional economies, and they exert an influence on future population growth. Thus it is important that attempts be made to measure these various migration streams, such as from rural countryside to urban centres, from cities to suburbs, from one province or economic region to another, and so on.

Migration by province of birth. Census figures on birthplace (province of birth) are able to shed some light on internal migration flows, by comparing the numbers of persons born in a given province with their province of present residence. However, such figures give no indication of the periodicity of the migrating process, and they apply only to the Canadian-born population presently living in a given province. Nevertheless, they do reflect something of the accumulated results of the major patterns of interprovincial movement of native-born persons over the years.

Data from the 1971 Census in Table 4.65 show that Ontario, Alberta and British Columbia have been net gainers in recent years of Canadian-born migrants from other provinces, while the remaining provinces have been net losers. Newfoundland and Quebec showed relatively the fewest numbers of their 1971 population as having been born in another province (3.3% and 4.6%, respectively), while British Columbia showed the highest (37.4%). These percentages reflect low rates of Canadian-born in-migrants to the former two provinces, and a high rate to the latter one. On the other hand, Saskatchewan-born persons were the most likely to be found living in a province other than that of their birth (40.0%), while Quebec-born and Ontario-born persons were the least likely (6.1% and 7.4%, respectively). This reflects a high

rate of out-migration of native-born persons from the former province, and low rates from the latter two.

Migration by residence five years ago. Perhaps the most useful estimates on internal migration are those resulting from the inclusion in national censuses of questions which seek to determine the exact place of residence of each person at the date of the preceding census five years earlier. From a comparison with the location of their present residence, it is possible to estimate the size, directional flows and characteristics of the migrating population over the period. Such questions were included in both the 1961 and 1971 censuses of Canada. Migration trends in recent years as revealed by the 1961 Census were issued in monographs (see Catalogue Nos. 99-548 and 99-557) and other studies (see Catalogue No. 99-513). A few basic summary results of the 1971 Census, which included questions on place of residence five years earlier at June 1, 1966, are presented in Tables 4.66 and 4.67.

The migration status of the population in 1971 in terms of residence in 1966 is summarized in Table 4.66. It shows that almost one half (47.4%) of Canada's population five years of age and over in 1971 were living in a different home than five years earlier. A total of 23.5% had moved only within the same municipality, while 23.9% had moved from one municipality to another. The latter group consisted of 14.0% who were movers within the same province, 4.3% from one province to another, and 4.2% from outside Canada. Ontario was the most favoured province of destination for in-migrants from other provinces and from outside Canada. A total of 40.6% of all 1966-71 interprovincial migrants and immigrants from abroad were living in Ontario in 1971. British Columbia was next, receiving 18.4% of these migrants, followed by Quebec (12.9%) and Alberta (11.2%).

Migration by type of locality. Table 4.67 compares the type of locality of residence on June 1, 1966 and June 1, 1971 for migrants who had moved from one municipality to another between these two dates. Metropolitan areas constituted the favourite destination of these migrants, as well as being the major locality of origin. A total of 58.0% of all migrants moved to a municipality within a metropolitan area, (including those moving from one municipality to another within the same metropolitan area). Immigrants from outside Canada showed the greatest propensity to locate in a metropolitan area, and this was the destination of 80.9% of their numbers. By locality of origin, 44.6% of the 1966-71 migrants residing in metropolitan areas in 1971 were also living in a metropolitan area in 1966 (i.e. in a different municipality of the same or other metropolitan area), 15.2% were from other urban localities, 9.7% from rural areas, and 24.3% were from outside Canada.

Only about 217,000 or 4.6% of all 1966-71 migrants had been living in predominantly farm localities in 1966 before moving. However, this figure represented over 10% of the total farm population. One third (32.8%) of these movers from farm localities were living in metropolitan areas in 1971, over one half (54.2%) in other urban or rural non-farm localities, and only 13.0% in predominantly farm areas. The actual decline in the rural farm population of all ages (i.e. the total population living on farms in all rural localities) was from 1.9 million in 1966 to 1.4 million in 1971 (see Section 4.2.3 and Table 4.11).

Sources

- 4.1 Census Characteristics Division, Census Field, Statistics Canada. The early growth of Canada's population is analyzed in more detail in Vol. I of the 1931 Census; other accounts of growth prior to the present century are contained in Vol. I, 1941; Vol. X, 1951; Bulletin 7.1-1 (Catalogue No. 99-511), 1961; and Bulletin 5.1-1 (Catalogue No. 99-701), 1971. More detailed accounts of recent population growth are available in the *Canada Year Book*, 1969 edition pp 153-165, 1970-71 edition pp 210-220, and in above census reports 99-511 and 99-701.
- 4.2 - 4.3.3 Census Characteristics Division, Census Field, Statistics Canada; except 1973 population estimates for provinces, metropolitan areas, and age groups provided by Population Estimates and Projections Division of Census Field.
- 4.3.4 Communications Division, Program Co-ordination and Administration Branch, Department of Indian Affairs and Northern Development.
- 4.4 Census Characteristics Division, Census Field, Statistics Canada.
- 4.5 - 4.8 Health and Welfare Division, Household and Institutional Statistics Field, Statistics Canada.
- 4.9.1 Canada Immigration Division, Department of Manpower and Immigration.
- 4.9.2 Population Estimates and Projections Division, Census Field, Statistics Canada.
- 4.9.3 Census Characteristics Division, Census Field, Statistics Canada.

Tables

..	not available	e	estimate
...	not appropriate or not applicable	p	preliminary
—	nil or zero	r	revised
--	too small to be expressed		certain tables may not add due to rounding

All figures of the 1971 Census in Tables 4.11 to 4.13, 4.15 to 4.21, and 4.23 to 4.30, have been subjected to a confidentiality procedure to prevent the possibility of associating small figures with an identifiable individual. The particular technique used is known as "random rounding". Under this method, all last or "unit" digits in a table (including all totals) are randomly rounded (either up or down) to "0" or "5". This technique provides the strongest possible protection against direct, residual, or negative disclosures without adding any significant error to the census data. However, since totals are independently rounded they do not necessarily equal the sum of individual rounded figures in distributions. Also, minor differences can be expected for corresponding totals and cell values in various census tabulations.

4.1 Growth of the population of Canada, 1851-1971

Census Year	Population No.	Increase during intercensal period		Average annual rate of population growth %
		No.	%	
1851	2,436,297			
1861	3,229,633	793,336	32.6	2.9
1871	3,689,257	459,624	14.2	1.3
1881	4,324,810	635,553	17.2	1.6
1891	4,833,239	508,429	11.8	1.1
1901	5,371,315	538,076	11.1	1.1
1911	7,206,643	1,835,328	34.2	3.0
1921	8,787,949	1,581,306	21.9	2.0
1931	10,376,786	1,588,837	18.1	1.7
1941	11,506,655	1,129,869	10.9	1.0
1951 ¹	14,009,429	2,502,774	21.8	1.7
1961	18,238,247	4,228,818	30.2	2.7
1971	21,568,311	3,330,064	18.3	1.7

¹1951 Census figures include Newfoundland for the first time. Excluding Newfoundland the increase would have been 2,141,358 or 18.6%.

4.2 Growth components of Canada's population, 1851-1971

Period	Total population growth '000	Births '000	Deaths '000	Natural increase '000	Ratio of natural increase to total growth %	Immigration '000	Emigration '000	Net migration '000	Ratio of net migration to total growth %
1851-1861	793	1,281	670	611	77.0	352	170	182	23.0
1861-1871	460	1,370	760	610	132.6	260	410	-150	-32.6
1871-1881	636	1,480	790	690	108.5	350	404	-54	-8.5
1881-1891	508	1,524	870	654	128.7	680	826	-146	-28.7
1891-1901	538	1,548	880	668	124.2	250	380	-130	-24.2
1901-1911	1,835	1,925	900	1,025	55.9	1,550	740	810	44.1
1911-1921	1,581	2,340	1,070	1,270	80.3	1,400	1,089	311	19.7
1921-1931	1,589	2,420	1,060	1,360	85.5	1,200	970	230	14.5
1931-1941	1,130	2,294	1,072	1,222	108.1	149	241	-92	-8.1
1941-1951 ¹	2,503	3,212	1,220	1,992	92.3	548	382	166	7.7
1951-1961	4,228	4,468	1,320	3,148	74.5	1,543	463	1,080	25.5
1961-1971	3,330	4,105	1,497	2,608	78.3	1,429 ^r	707 ^r	722	21.7

¹Includes Newfoundland in 1951 but not in 1941.

4.3 Projections of population, 1971-2001

Year	Population as at June 1 '000	Annual rate of population growth %	Distribution by age			
			0-19 %	20-44 %	45-64 %	65+ %
Projection A ¹						
1971	21,568.3	...	39.4	33.9	43.8	8.1
1976	23,086.1	1.4	36.1	36.4	45.8	8.6
1981	25,311.5	1.8	34.3	38.5	47.0	9.0
1986	27,810.9	1.9	33.9	39.6	48.1	9.3
1991	30,177.6	1.6	34.9	38.2	48.7	9.8
1996	32,347.1	1.4	35.6	36.2	48.1	9.9
2001	34,611.4	1.3	34.6	35.5	47.6	9.8
Projection B ²						
1971	21,568.3	...	39.4	33.9	43.8	8.1
1976	22,846.3	1.2	35.9	36.4	45.9	8.6
1981	24,472.5	1.4	33.2	38.9	47.8	9.3
1986	26,258.6	1.4	31.6	40.5	49.7	9.8
1991	27,902.1	1.2	31.8	39.6	50.9	10.5
1996	29,317.0	0.9	31.8	37.7	50.9	10.8
2001	30,655.5	0.9	30.8	36.4	50.8	10.9

4.3 Projections of population, 1971-2001 (concluded)

Year	Population as at June 1 '000	Annual rate of population growth %	Distribution by age			
			0-19 %	20-44 %	45-64 %	65+ %
Projection C ^a						
1971	21,568.3	...	39.4	33.9	43.8	8.1
1976	22,772.4	1.1	35.7	36.5	46.1	8.7
1981	24,041.4	1.1	32.0	39.6	48.6	9.5
1986	25,382.9	1.1	29.3	42.0	51.4	10.1
1991	26,591.4	0.9	28.4	41.5	53.4	11.0
1996	27,569.7	0.7	27.8	40.0	54.1	11.5
2001	28,369.7	0.5	26.7	37.9	54.6	11.8

The above figures represent new series of projections replacing those in the 1973 *Canada Year Book* (see text in Section 4.1.3).

^aProjection A assumptions: fertility will change from 2.19 children in 1971 to 2.60 by 1985; net migration gain 100,000 a year; and expectation of life at birth will increase to 70.2 years for males and 78.4 for females by 1986.

^bProjection B assumptions: fertility will change to 2.20 children by 1985; net migration gain 60,000 a year; and mortality same as Projection A.

^cProjection C assumptions: fertility will change to 1.80 children by 1985; net migration same as Projection B; and mortality same as Projection A.

4.4 Population and percentage change of population, by province, 1951-71

Province or territory	Population and percentage change				
	Population				
	1951	1956	1961	1966	1971
Newfoundland	361,416	415,074	457,853	493,396	522,104
Prince Edward Island	98,429	99,285	104,629	108,535	111,641
Nova Scotia	642,584	694,717	737,007	756,039	788,960
New Brunswick	515,697	554,616	597,936	616,788	634,557
Quebec	4,055,681	4,628,378	5,259,211	5,780,845	6,027,764
Ontario	4,597,542	5,404,933	6,236,092	6,960,870	7,703,106
Manitoba	776,541	850,040	921,686	963,066	988,247
Saskatchewan	831,728	880,665	925,181	955,344	926,242
Alberta	939,501	1,123,116	1,331,944	1,463,203	1,627,874
British Columbia	1,165,210	1,398,464	1,629,082	1,873,674	2,184,621
Yukon Territory	9,096	12,190	14,628	14,382	18,388
Northwest Territories	16,004	19,313	22,998	28,738	34,807
Canada	14,009,429	16,080,791	18,238,247	20,014,880	21,568,311
	Percentage change				Average annual change
	1951-56	1956-61	1961-66	1966-71	1951-71
					%
Newfoundland	14.8	10.3	7.8	5.8	1.9
Prince Edward Island	0.9	5.4	3.7	2.9	0.6
Nova Scotia	8.1	6.1	2.6	4.4	1.0
New Brunswick	7.5	7.8	3.2	2.9	1.0
Quebec	14.1	13.6	9.9	4.3	2.0
Ontario	17.6	15.4	11.6	10.7	2.6
Manitoba	9.5	8.4	4.5	2.6	1.2
Saskatchewan	5.9	5.1	3.3	-3.0	0.5
Alberta	19.5	18.6	9.9	11.2	2.8
British Columbia	20.0	16.5	15.0	16.6	3.2
Yukon Territory	34.0	20.0	-1.7	27.8	3.6
Northwest Territories	20.7	19.1	25.0	21.1	4.0
Canada	14.8	13.4	9.7	7.8	2.2
					%
					1966-71
Newfoundland					1.1
Prince Edward Island					0.6
Nova Scotia					0.9
New Brunswick					0.6
Quebec					0.8
Ontario					2.0
Manitoba					0.5
Saskatchewan					-0.6
Alberta					2.2
British Columbia					3.1
Yukon Territory					5.0
Northwest Territories					3.9
Canada					1.5

4.5 Components of population change, by province, 1961-66 and 1966-71

Province or territory	Total population change		Natural increase		Net migration	
	1961-66	1966-71	1961-66	1966-71	1961-66	1966-71
Newfoundland	35,543	28,708	59,577	49,096	-24,034	-20,388
Prince Edward Island	3,906	3,106	8,506	5,207	-4,600	-2,101
Nova Scotia	19,032	32,921	59,526	37,418	-40,494	-4,497
New Brunswick	18,852	17,769	53,229	35,233	-34,377	-17,464
Quebec	521,634	246,919	457,717	288,727	63,917	-41,808
Ontario	724,778	742,236	487,852	373,072	236,926	369,164
Manitoba	41,380	25,181	70,340	49,260	-28,960	-24,079
Saskatchewan	30,163	-29,102	75,691	50,867	-45,528	-79,969
Alberta	131,259	164,671	134,607	105,293	-3,348	59,378
British Columbia	244,592	310,947	104,103	88,494	140,489	222,453
Yukon Territory and Northwest Territories	5,494	10,075	6,745	6,720	-1,251	3,355
Canada	1,776,633	1,553,431	1,517,893	1,089,387	258,740	464,044

4.6 Annual estimates of population, by province, as at June 1, 1966-73 (thousands)

Province or territory	Census 1966	Estimates 1967-70				Census 1971	Estimates 1972 and 1973	
		1967	1968	1969	1970		1972	1973
Newfoundland	493	499	506	514	517	522	532	541
Prince Edward Island	109	109	110	111	110	112	113	115
Nova Scotia	756	760	767	775	782	789	794	805
New Brunswick	617	620	625	628	627	635	642	652
Quebec	5,781	5,864	5,928	5,985	6,013	6,028	6,059	6,081
Ontario	6,961	7,127	7,262	7,385	7,551	7,703	7,825	7,939
Manitoba	963	963	971	979	983	988	992	998
Saskatchewan	955	957	960	958	941	926	916	908
Alberta	1,463	1,490	1,524	1,559	1,595	1,628	1,655	1,683
British Columbia	1,874	1,945	2,003	2,060	2,128	2,185	2,247	2,315
Yukon Territory	14	15	15	16	17	18	19	20
Northwest Territories	29	29	30	31	33	35	36	38
Canada	20,015	20,378	20,701	21,001	21,297	21,568	21,830	22,095

4.7 Populations of incorporated cities, towns and villages classified by size group, 1961, 1966 and 1971

Size group	1961			1966			1971		
	Incor- porated centres	Popu- lation	% of total popu- lation	Incor- porated centres	Popu- lation	% of total popu- lation	Incor- porated centres	Popu- lation	% of total popu- lation
Over 500,000	2	1,863,469	10.2	2	1,886,839	9.4	2	1,927,138	8.9
Between									
400,000 and 500,000	—	—	—	1	410,375	2.1	3	1,267,727	5.9
300,000 and 400,000	1	384,522	2.1	2	707,500	3.5	2	611,514	2.8
200,000 and 300,000	5	1,338,294	7.3	3	845,867	4.2	4	900,778	4.2
100,000 and 200,000	4	568,056	3.1	6	997,051	5.0	8	1,060,048	4.9
50,000 and 100,000	17	1,134,214	6.2	26	1,740,446	8.7	26	1,870,435	8.7
25,000 and 50,000	41	1,431,909	7.9	43	1,438,388	7.2	49	1,633,969	7.6
15,000 and 25,000	43	862,101	4.7	52	1,019,205	5.1	59	1,150,768	5.3
10,000 and 15,000	61	743,474	4.1	65	781,611	3.9	55	675,748	3.1
5,000 and 10,000	132	932,936	5.1	125	898,136	4.5	144	1,028,412	4.8
3,000 and 5,000	151	579,201	3.2	165	637,117	3.2	173	670,537	3.1
1,000 and 3,000	465	793,465	4.4	471	818,003	4.1	502	866,086	4.0
Under 1,000	1,039	437,207	2.4	1,057	445,246	2.2	1,093	451,810	2.1
Total	1,961	11,068,848	60.7	2,018	12,625,784	63.1	2,120	14,114,970	65.4

4.8 Population of incorporated cities and towns of 50,000 and over, 1961, 1966 and 1971

Incorporated city or town	Year of incor- poration	1961	1966	1971
Brantford, Ont.	1877	55,201	59,854 *	64,421
Burlington, Ont.	1915	47,008	65,941 *	87,023
Calgary, Alta.	1893	249,641	330,575 *	403,319 *
Dartmouth, NS	1961	46,966	58,745	64,770
Edmonton, Alta.	1904	281,027	376,925 *	438,152 *
Guelph, Ont.	1879	39,838	51,377 *	60,087 *
Halifax, NS	1841	92,511	86,792	122,035 *
Hamilton, Ont.	1846	273,991	298,121 *	309,173
Hull, Que.	1875	56,929	60,176 *	63,580 *
Kingston, Ont.	1846	53,526	59,004	59,047 *
Kitchener, Ont.	1912	74,485	93,255 *	111,804 *
LaSalle, Que.	1958	30,904	48,322	72,912
Laval, Que.	1965	124,741	196,088	228,010
London, Ont.	1855	169,569	194,416	223,222 *
Longueuil, Que.	1920	24,131	25,593	97,590 *
Mississauga, Ont.	1968	62,616	93,492 *	156,070 *
Montreal, Que.	1832	1,191,062	1,222,255 *	1,214,352 *
Montreal N., Que.	1959	48,433	67,806	89,139 *
Niagara Falls, Ont.	1903	22,351	56,891 *	67,163 *
Oakville, Ont.	1857	10,366	52,793 *	61,483 *
Oshawa, Ont.	1924	62,415	78,082	91,587
Ottawa, Ont.	1854	268,206	290,741	302,341
Peterborough, Ont.	1905	47,185	56,177 *	58,111 *
Quebec, Que.	1832	171,979	166,984	186,088 *
Regina, Sask.	1903	112,141	131,127 *	139,469 *
Saint John, NB	1785	55,153	51,567	89,039 *
St. Catharines, Ont.	1876	84,472	97,101	109,722 *
Ste-Foy, Que.	1955	29,716	48,298 *	68,385 *
St. James-Assiniboia, Man.	1969	44,434	59,255	71,431
St. John's, Nfld.	1888	63,633	79,884 *	88,102 *
St-Laurent, Que.	1955	49,805	59,479 *	62,955 *
St-Léonard, Que.	1963	4,893	25,328 *	52,040 *
Sarnia, Ont.	1914	50,976	54,552	57,644
Saskatoon, Sask.	1906	95,526	115,892 *	126,449 *
Sault Ste. Marie, Ont.	1912	43,088	74,594 *	80,332
Sherbrooke, Que.	1875	66,554	75,690	80,711
Sudbury, Ont.	1930	80,120	84,888 *	90,535
Thunder Bay, Ont.	1970	98,671	104,539	108,411

4.8 Population of incorporated cities and towns of 50,000 and over, 1961, 1966 and 1971 (concluded)

Incorporated city or town	Year of incorporation	1961	1966	1971
Toronto, Ont.	1834	672,407	664,584	712,786 *
Trois-Rivières, Que.	1857	53,477	57,540 *	55,869
Vancouver, BC	1886	384,522	410,375	426,256
Verdun, Que.	1912	78,317	76,832	74,718
Victoria, BC	1862	54,941	57,453	61,761
Windsor, Ont.	1892	114,367	192,544 *	203,300 *
Winnipeg, Man.	1873	265,429	257,005 *	246,246

*Indicates a boundary change since the preceding census. Population totals in these cases are based on a different area, i.e. the boundaries at that particular census year.

4.9 Population of census metropolitan areas (based on 1971 boundaries) 1951-71, and estimates for 1973

Census metropolitan area	1951	1956	1961	1966	1971	1973 (estimate)
Calgary	142,315	201,022	279,062	330,575	403,319	431,000
Chicoutimi-Jonquière	91,161	110,317	127,616	132,954	133,703	136,000
Edmonton	193,622	275,182	359,821	425,370	495,702	518,000
Halifax	138,427	170,481	193,353	209,901	222,637	222,000
Hamilton	281,901	341,513	401,071	457,410	498,523	513,000
Kitchener	107,474	128,722	154,864	192,275	226,846	235,000
London	167,724	196,338	226,669	253,701	286,011	293,000
Montreal	1,539,308	1,830,232	2,215,627	2,570,982	2,743,208	2,775,000
Ottawa-Hull	311,587	367,756	457,038	528,774	602,510	619,000
Quebec	289,294	328,405	379,067	436,918	480,502	493,000
Regina	72,731	91,215	113,749	132,432	140,734	147,000
Saint John, NB	80,689	88,375	98,083	104,195	106,744	110,000
St. Catharines-Niagara	189,046	233,034	257,796	285,453	303,429	308,000
St. John's, Nfld.	80,869	92,565	106,666	117,533	131,814	133,000
Saskatoon	55,679	72,930	95,564	115,900	126,449	128,000
Sudbury	80,543	107,889	127,446	136,739	155,424	155,000
Thunder Bay	73,713	87,624	102,085	108,035	112,093	113,000
Toronto	1,261,861	1,571,952	1,919,409	2,289,900	2,628,043	2,692,000
Vancouver	586,172	694,425	826,798	933,091	1,082,352	1,116,000
Victoria	114,859	136,127	155,763	175,262	195,800	203,000
Windsor	182,619	208,456	217,215	238,323	258,643	264,000
Winnipeg	357,229	412,741	476,543	508,759	540,262	560,000

4.10 Land area and density of population, by province, 1951-71

Province or territory	Land area sq miles	Population per sq mile				
		1951	1956	1961	1966	1971
Newfoundland	143,045	2.53	2.90	3.20	3.45	3.65
Prince Edward Island	2,184	45.07	45.46	47.91	49.70	51.11
Nova Scotia	20,402	31.50	34.05	36.12	37.06	38.67
New Brunswick	27,835	18.53	19.93	21.48	22.16	22.80
Quebec	523,860	7.74	8.84	10.04	11.04	11.50
Ontario	344,092	13.36	15.71	18.12	20.23	22.39
Manitoba	211,775	3.67	4.01	4.35	4.55	4.66
Saskatchewan	220,182	3.78	4.00	4.20	4.34	4.21
Alberta	248,800	3.78	4.51	5.35	5.88	6.54
British Columbia	359,279	3.24	3.89	4.53	5.22	6.08
Canada (excl. the territories)	2,101,454	6.65	7.64	8.66	9.50	10.24
Yukon Territory	205,346	0.04	0.06	0.07	0.07	0.09
Northwest Territories	1,253,438	0.01	0.02	0.02	0.02	0.03
Canada	3,560,238	3.93	4.52	5.12	5.62	6.06

4.11 Number and percentage of the population classified as urban, and rural by non-farm and farm, by province, 1971

Province or territory	Urban		Rural		Farm		Total		Total population
	No.	%	No.	%	No.	%	No.	%	
Newfoundland	298,800	57.2	218,775	41.9	4,525	0.9	223,305	42.8	522,105
Prince Edward Island	42,780	38.3	47,725	42.7	21,130	18.9	68,860	61.7	111,640
Nova Scotia	447,400	56.7	315,290	40.0	26,270	3.3	341,555	43.3	788,960
New Brunswick	361,145	56.9	247,845	39.1	25,565	4.0	273,410	43.1	634,555
Quebec	4,861,240	80.6	861,215	14.3	305,300	5.1	1,166,520	19.4	6,027,765
Ontario	6,343,630	82.4	995,840	12.9	363,640	4.7	1,359,475	17.6	7,703,105
Manitoba	686,445	69.5	171,390	17.3	130,410	13.2	301,800	30.5	988,245
Saskatchewan	490,630	53.0	202,280	21.8	233,335	25.2	435,610	47.0	926,240
Alberta	1,196,250	73.5	195,590	12.0	236,025	14.5	431,620	26.5	1,627,875
British Columbia	1,654,405	75.7	456,700	20.9	73,520	3.4	530,215	24.3	2,184,620
Yukon Territory	11,215	61.0	7,120	38.7	55	0.3	7,170	39.0	18,390
Northwest Territories	16,830	48.4	17,955	51.6	25	0.1	17,980	51.7	34,805
Canada	16,410,785	76.1	3,737,730	17.3	1,419,795	6.6	5,157,525	23.9	21,568,310

4.12 Sex distribution of the population, by province, 1971 and sex ratios, 1961, 1966 and 1971

Province or territory	Population, 1971		Males to 100 females		
	Male	Female	1961	1966	1971
Newfoundland	266,110	256,000	105	104	104
Prince Edward Island	56,225	55,415	104	103	101
Nova Scotia	396,470	392,495	103	101	101
New Brunswick	319,420	315,135	102	101	101
Quebec	2,994,550	3,033,215	100	100	99
Ontario	3,840,910	3,862,200	101	100	99
Manitoba	494,610	493,635	103	101	100
Saskatchewan	470,720	455,515	108	105	103
Alberta	827,785	800,090	107	104	103
British Columbia	1,100,375	1,084,250	104	103	101
Yukon Territory	9,920	8,470	127	119	117
Northwest Territories	18,280	16,530	126	118	111
Canada	10,795,370	10,772,945	102	101	100

4.13 Age distribution of the population, 1961, 1966 and 1971

Age group	Number			Percentage		
	1961	1966	1971	1961	1966	1971
0- 4 years	2,256,401	2,197,387	1,816,155	12.4	11.0	8.4
5- 9 "	2,079,522	2,300,857	2,254,005	11.4	11.5	10.4
10-14 "	1,855,999	2,093,513	2,310,740	10.2	10.5	10.7
15-19 "	1,432,559	1,837,725	2,114,345	7.9	9.2	9.8
20-24 "	1,183,646	1,461,298	1,889,400	6.5	7.3	8.8
25-29 "	1,209,297	1,241,794	1,584,125	6.6	6.2	7.3
30-34 "	1,271,810	1,241,697	1,305,425	7.0	6.2	6.1
35-39 "	1,270,924	1,286,144	1,263,870	7.0	6.4	5.9
40-44 "	1,118,961	1,257,028	1,262,530	6.1	6.3	5.9
45-49 "	1,015,316	1,089,915	1,239,040	5.6	5.4	5.7
50-54 "	863,188	988,264	1,052,540	4.7	4.9	4.9
55-59 "	705,835	816,300	954,725	3.9	4.1	4.4
60-64 "	583,635	663,410	777,020	3.2	3.3	3.6
65-69 "	487,102	531,709	619,960	2.7	2.7	2.9
70-74 "	402,175	427,207	457,380	2.2	2.1	2.1
75-79 "	274,237	300,365	325,510	1.5	1.5	1.5
80-84 "	146,817	177,319	204,170	0.8	0.9	0.9
85-89 "	60,784	76,790	100,010	0.3	0.4	0.5
90 years and over	20,039	26,158	37,380	0.1	0.1	0.2
Total	18,238,247	20,104,880	21,568,310	100.0	100.0	100.0

4.14 Estimated population by age group and sex, by province, as at June 1, 1973 (thousands)

Province or territory	Age group and sex							
	0-4 years		5-9 years		10-14 years		15-19 years	
	Male	Female	Male	Female	Male	Female	Male	Female
Newfoundland	31.4	29.9	33.7	32.5	34.0	32.4	32.2	31.3
Prince Edward Island	5.1	4.8	5.9	5.7	6.7	6.4	6.3	6.2
Nova Scotia	35.0	33.3	40.3	38.4	44.4	42.5	43.3	41.0
New Brunswick	29.7	28.2	33.8	32.3	37.9	35.9	37.7	36.0
Quebec	225.8	214.3	290.5	277.5	339.4	325.1	330.7	318.9
Ontario	325.0	309.1	371.8	354.3	414.9	394.4	384.6	370.2
Manitoba	43.2	41.4	46.4	44.9	52.2	49.8	50.1	48.2
Saskatchewan	37.5	36.0	44.1	42.0	50.9	49.2	50.5	48.2
Alberta	77.0	73.0	85.7	82.1	96.4	92.5	88.2	83.7
British Columbia	93.0	89.0	103.0	98.7	118.7	113.6	111.6	107.3
Yukon Territory	1.2	1.1	1.2	1.1	1.2	1.1	0.8	0.8
Northwest Territories	3.0	2.8	2.9	2.7	2.5	2.3	1.7	1.6
Canada	906.9	862.9	1,059.3	1,012.2	1,199.2	1,145.2	1,137.7	1,093.4
	20-24 years		25-34 years		35-44 years		45-54 years	
	Male	Female	Male	Female	Male	Female	Male	Female
Newfoundland	24.5	24.7	34.6	34.1	26.0	23.9	23.8	21.8
Prince Edward Island	5.0	5.0	6.9	6.7	5.7	5.3	5.2	5.3
Nova Scotia	36.5	35.0	54.0	52.5	41.4	40.5	39.9	41.3
New Brunswick	30.9	30.3	42.8	40.7	31.7	31.5	31.1	32.2
Quebec	281.9	282.5	462.0	462.3	355.3	355.1	315.9	329.8
Ontario	341.5	342.6	589.8	581.4	482.7	461.2	444.6	451.6
Manitoba	43.9	43.6	67.6	65.7	52.3	50.9	52.5	55.2
Saskatchewan	37.5	35.6	50.5	49.5	46.7	45.1	50.1	49.8
Alberta	73.1	73.5	122.5	120.9	101.8	93.8	86.5	84.6
British Columbia	100.1	97.6	174.8	168.0	140.4	127.6	126.5	128.6
Yukon Territory	0.7	0.8	2.1	1.8	1.4	1.0	1.0	0.8
Northwest Territories	1.7	1.6	3.2	3.0	2.2	1.8	1.4	1.2
Canada	977.3	972.8	1,610.8	1,586.6	1,287.6	1,237.7	1,178.5	1,202.2

4.14 Estimated population by age group and sex, by province, as at June 1, 1973 (thousands) (concluded)

Province or territory	Age group and sex							
	55-64 years		65-69 years		70+ years		All ages	
	Male	Female	Male	Female	Male	Female	Male	Female
Newfoundland	19.3	17.3	5.9	5.7	9.9	11.9	275.3	265.5
Prince Edward Island	5.0	4.9	1.9	1.9	3.9	5.1	57.6	57.3
Nova Scotia	35.2	35.4	12.7	13.0	20.8	28.4	403.5	401.3
New Brunswick	26.3	26.2	9.4	10.0	16.1	21.2	327.4	324.5
Quebec	228.0	246.8	78.3	93.0	110.3	158.0	3,018.1	3,063.3
Ontario	315.5	327.8	110.4	128.1	173.2	264.2	3,954.0	3,984.9
Manitoba	44.4	46.0	16.4	17.7	29.1	36.3	498.1	499.7
Saskatchewan	43.9	42.9	16.8	15.9	31.7	33.7	460.2	447.9
Alberta	61.7	61.1	22.8	22.1	38.9	41.7	854.6	829.0
British Columbia	97.3	102.6	36.2	37.1	63.4	79.9	1,165.0	1,150.0
Yukon Territory	0.7	0.4	0.2	0.1	0.1	0.1	10.6	9.1
Northwest Territories	0.8	0.7	0.2	0.2	0.2	0.1	19.8	18.0
Canada	878.1	912.1	311.2	344.8	497.6	680.6	11,044.2	11,050.5

4.15 Marital status of the population 15 years and over, by age group and sex, 1971

Age group	Sex	Single ¹	Married	Widowed	Divorced	Total
15-24 years	M	1,693,645	317,350	2,705	2,515	2,016,205
	F	1,374,290	603,585	3,945	5,730	1,987,540
	T	3,067,935	920,930	6,640	8,245	4,003,745
25-34 years	M	293,005	1,149,810	3,415	15,355	1,461,585
	F	179,150	1,214,385	9,450	24,975	1,427,960
	T	472,155	2,364,195	12,865	40,340	2,889,545
35-44 years	M	126,565	1,132,775	6,990	19,490	1,285,815
	F	88,225	1,099,585	26,605	26,160	1,240,580
	T	214,790	2,232,360	33,595	45,650	2,526,400
45-54 years	M	100,980	997,320	16,280	17,740	1,132,315
	F	84,990	973,660	77,965	22,650	1,159,265
	T	185,970	1,970,980	94,235	40,395	2,291,575
55-64 years	M	80,565	729,935	31,510	12,095	854,105
	F	83,640	620,580	159,310	14,105	877,630
	T	164,195	1,350,515	190,815	26,200	1,731,740
65-69 years	M	31,915	238,045	22,710	3,380	296,050
	F	34,595	178,810	106,945	3,560	323,910
	T	66,515	416,855	129,660	6,940	619,955
70 years and over	M	50,980	323,525	107,525	3,780	485,810
	F	68,145	198,245	368,680	3,570	638,640
	T	119,125	521,765	476,200	7,350	1,124,445
Total	M	2,377,645	4,888,760	191,125	74,355	7,531,890
	F	1,913,025	4,888,845	752,895	100,760	7,655,525
	T	4,290,675	9,777,605	944,025	175,115	15,187,415

¹The total number of single persons of all ages (including those under 15) amounted to 10,671,575, comprising 5,641,130 males and 5,030,445 females.

4.16 Mother tongues of the population, 1961 and 1971, and language most often spoken in the home, 1971

Language group	Language first spoken and still understood				Language most often spoken in the home	
	1961		1971		1971	
	No.	%	No.	%	No.	%
English	10,660,534	58.45	12,973,810	60.15	14,446,235	66.97
French	5,123,151	28.09	5,793,650	26.86	5,546,025	25.71
Italian	339,626	1.86	538,360	2.50	425,235	1.97
German	563,713	3.09	561,085	2.60	213,350	0.99
Ukrainian	361,496	1.98	309,855	1.44	144,760	0.67
Indian and Eskimo	166,531	0.91	179,820	0.83	137,285	0.64
Greek	40,455	0.22	104,455	0.48	86,830	0.40
Chinese	49,099	0.27	94,855	0.44	77,890	0.36
Portuguese	18,213	0.10	86,925	0.40	74,765	0.35
Polish	161,720	0.89	134,780	0.62	70,960	0.33
Magyar (Hungarian)	85,939	0.47	86,835	0.40	50,670	0.23
Netherlands	170,177	0.93	144,925	0.67	36,170	0.17
Croatian, Serbian, etc.	28,866	0.16	74,190	0.34	29,310	0.13
Yiddish	82,448	0.45	49,890	0.23	26,330	0.12
Czech and Slovak	51,423	0.28	45,150	0.21	24,555	0.11
Indo-Pakistani	4,505	0.02	32,555	0.15	23,110	0.11
Finnish	44,785	0.25	36,725	0.17	18,280	0.08
Spanish	6,720	0.04	23,815	0.11	17,710	0.08
Arabic (incl. Syrian)	12,999	0.07	28,550	0.13	15,260	0.07
Russian	42,903	0.24	31,745	0.15	12,590	0.06
Japanese	17,856	0.10	16,890	0.08	10,500	0.05
Estonian	13,830	0.08	14,520	0.07	10,110	0.05
Lithuanian	14,997	0.08	14,725	0.07	9,985	0.05
Lettish	14,062	0.08	14,140	0.07	9,250	0.04
Danish	35,035	0.19	27,395	0.13	4,690	0.02

4.16 Mother tongues of the population, 1961 and 1971, and language most often spoken in the home, 1971 (continued)

Language group	Language first spoken and still understood				Language most often spoken in the home	
	1961		1971		1971	
	No.	%	No.	%	No.	%
Romanian	10,165	0.06	11,300	0.05	4,455	0.02
Flemish	14,304	0.08	14,240	0.07	3,190	0.01
Swedish	32,632	0.18	21,680	0.10	2,210	0.01
Norwegian	40,054	0.22	27,405	0.13	2,160	0.01
Gaelic	7,533	0.04	21,200	0.10	1,175	--
Icelandic	8,993	0.05	7,860	0.04	995	--
Welsh	3,040	0.02	3,160	0.01	370	--
Other	10,443	0.06	41,830	0.19	31,900	0.15
Total	18,238,247	100.00	21,568,310	100.00	21,568,310	100.00

4.17 Numerical and percentage distribution of English, French, and other mother tongues, by province, 1961 and 1971

Province or territory		1961				1971			
		English	French	Other	Total	English	French	Other	Total
Nfld.	No.	451,530	3,150	3,173	457,853	514,515	3,640	3,950	522,105
	%	98.6	0.7	0.7	100.0	98.5	0.7	0.8	100.0
PEI	No.	95,564	7,958	1,107	104,629	103,100	7,365	1,180	111,640
	%	91.3	7.6	1.1	100.0	92.4	6.6	1.1	100.0
NS	No.	680,233	39,568	17,206	737,007	733,555	39,335	16,075	788,960
	%	92.3	5.4	2.3	100.0	93.0	5.0	2.0	100.0
NB	No.	378,633	210,530	8,773	597,936	410,400	215,725	8,430	634,560
	%	63.3	35.2	1.5	100.0	64.7	34.0	1.3	100.0
Que.	No.	697,402	4,269,689	292,120	5,259,211	789,185	4,867,250	371,325	6,027,760
	%	13.3	81.2	5.6	100.0	13.1	80.7	6.2	100.0
Ont.	No.	4,834,623	425,302	976,167	6,236,092	5,971,570	482,040	1,249,495	7,703,105
	%	77.5	6.8	15.7	100.0	77.5	6.3	16.2	100.0
Man.	No.	584,526	60,899	276,261	921,686	662,720	60,545	264,980	988,245
	%	63.4	6.6	30.0	100.0	67.1	6.1	26.8	100.0
Sask.	No.	638,156	36,163	250,862	925,181	685,915	31,605	208,720	926,245
	%	69.0	3.9	27.1	100.0	74.1	3.4	22.5	100.0
Alta.	No.	962,319	42,276	327,349	1,331,944	1,263,935	46,500	317,440	1,627,875
	%	72.2	3.2	24.6	100.0	77.6	2.9	19.5	100.0
BC	No.	1,318,498	26,179	284,405	1,629,082	1,807,255	38,035	339,335	2,184,620
	%	80.9	1.6	17.5	100.0	82.7	1.7	15.5	100.0
YT	No.	10,869	443	3,316	14,628	15,345	450	2,595	18,385
	%	74.3	3.0	22.7	100.0	83.5	2.4	14.1	100.0
NWT	No.	8,181	994	13,823	22,998	16,305	1,160	17,335	34,810
	%	35.6	4.3	60.1	100.0	46.8	3.3	49.8	100.0
Canada	No.	10,660,534	5,123,151	2,454,562	18,238,247	12,973,810	5,793,650	2,800,850	21,568,310
	%	58.5	28.1	13.5	100.0	60.2	26.9	13.0	100.0

4.18 Numerical and percentage distribution of the population speaking one or both of the official languages, by province, 1961 and 1971

Year and province or territory	English only		French only		English and French		Neither English nor French	
	No.	%	No.	%	No.	%	No.	%
1961								
Newfoundland	450,945	98.5	522	0.1	5,299	1.2	1,087	0.2
Prince Edward Island	95,296	91.1	1,219	1.2	7,938	7.6	176	0.2
Nova Scotia	684,805	92.9	5,938	0.8	44,987	6.1	1,277	0.2
New Brunswick	370,922	62.0	112,054	18.7	113,495	19.0	1,465	0.2
Quebec	608,635	11.6	3,254,850	61.9	1,338,878	25.5	56,848	1.1
Ontario	5,548,766	89.0	95,236	1.5	493,270	7.9	98,820	1.6
Manitoba	825,955	89.6	7,954	0.9	68,368	7.4	19,409	2.1
Saskatchewan	865,821	93.6	3,853	0.4	42,074	4.5	13,433	1.5
Alberta	1,253,824	94.1	5,534	0.4	56,920	4.3	15,666	1.2
British Columbia	1,552,560	95.3	2,559	0.2	57,504	3.5	16,459	1.0
Yukon Territory	13,679	93.5	38	0.3	825	5.6	86	0.6
Northwest Territories	13,554	58.9	109	0.5	1,614	7.0	7,721	33.6
Canada	12,284,762	67.4	3,489,866	19.1	2,231,172	12.2	232,447	1.3
1971								
Newfoundland	511,620	98.0	510	0.1	9,350	1.8	625	0.1
Prince Edward Island	101,820	91.2	680	0.6	9,110	8.2	30	--
Nova Scotia	730,700	92.6	4,185	0.5	53,035	6.7	1,035	0.1
New Brunswick	396,855	62.5	100,985	15.9	136,115	21.5	1,600	0.1
Quebec	632,515	10.5	3,668,020	60.9	1,663,790	27.6	63,445	1.1
Ontario	6,724,100	87.3	92,840	1.2	716,065	9.3	170,090	2.2
Manitoba	881,715	89.2	5,020	0.5	80,935	8.2	20,585	2.1
Saskatchewan	867,315	93.6	1,825	0.2	45,985	5.0	11,110	1.2
Alberta	1,525,575	93.7	3,310	0.2	81,000	5.0	17,990	1.1
British Columbia	2,054,690	94.1	1,775	0.1	101,435	4.6	26,725	1.2
Yukon Territory	17,130	93.2	5	--	1,210	6.6	35	0.2
Northwest Territories	25,500	73.3	100	0.3	2,120	6.1	7,085	20.4
Canada	14,469,540	67.1	3,879,255	18.0	2,900,155	13.4	319,360	1.5

4.19 Population by ethnic group, 1951, 1961 and 1971

Ethnic group	1951		1961		1971	
	No.	%	No.	%	No.	%
British Isles	6,709,685	47.9	7,996,669	43.8	9,624,115	44.6
English	3,630,344	25.9	4,195,175	23.0		
Irish	1,439,635	10.3	1,753,351	9.6		
Scottish	1,547,470	11.0	1,902,302	10.4		
Welsh and other	92,236	0.7	145,841	0.8		
French	4,319,167	30.8	5,540,346	30.4	6,180,120	28.7
Other European	2,553,722	18.2	4,116,849	22.6	4,959,680	23.0
Austrian	32,231	0.2	106,535	0.6	42,120	0.2
Belgian	35,148	0.2	61,382	0.3	51,135	0.2
Czech and Slovak	63,959	0.5	73,061	0.4	81,870	0.4
Danish	42,671	0.3	85,473	0.5	75,725	0.4
Finnish	43,745	0.3	59,436	0.3	59,215	0.3
German	619,995	4.4	1,049,599	5.8	1,317,200	6.1
Greek	13,966	0.1	56,475	0.3	124,475	0.6
Hungarian	60,460	0.4	126,220	0.7	131,890	0.6
Icelandic	23,307	0.2	30,623	0.2	27,905	0.1
Italian	152,245	1.1	450,351	2.5	730,820	3.4
Jewish	181,670	1.3	173,344	1.0	296,945	1.4
Lithuanian	16,224	0.1	27,629	0.2	24,535	0.1
Netherlands	264,267	1.9	429,679	2.4	425,945	2.0
Norwegian	119,266	0.8	148,681	0.8	179,290	0.8
Polish	219,845	1.6	323,517	1.8	316,425	1.5
Portuguese					96,875	0.4
Romanian	23,601	0.2	43,805	0.2	27,375	0.1
Russian	91,279	0.7	119,168	0.7	64,475	0.3
Spanish					27,515	0.1
Swedish	97,780	0.7	121,757	0.6	101,870	0.5
Ukrainian	395,043	2.8	473,337	2.6	580,660	2.7
Yugoslavian	21,404	0.2	68,587	0.4	104,950	0.5
Other	35,616	0.2	88,190	0.5	70,460	0.3
Asiatic	72,827	0.5	121,753	0.7	285,540	1.3
Chinese	32,528	0.2	58,197	0.3	118,815	0.6
Japanese	21,663	0.2	29,157	0.2	37,260	0.2
Other	18,636	0.1	34,399	0.2	129,460	0.6
Other	354,028	2.5	462,630	2.5	518,850	2.4
Eskimo	9,733	0.1	11,835	0.1	17,550	0.1
Native Indian	155,874	1.1	208,286	1.1	295,215	1.4
Negro	18,020	0.1	32,127	0.2	34,445	0.2
West Indian					28,025	0.1
Other and not stated	170,401	1.2	210,382	1.2	143,620	0.7
Total	14,009,429	100.0	18,238,247	100.0	21,568,310	100.0

4.20 Principal religious denominations of the population, 1951, 1961 and 1971

Religious denomination	1951		1961		1971	
	No.	%	No.	%	No.	%
Adventist	21,398	0.2	25,999	0.1	28,590	0.1
Anglican Church of Canada	2,060,720	14.7	2,409,068	13.2	2,543,180	11.8
Baptist	519,585	3.7	593,553	3.3	667,245	3.1
Christian Reformed			62,257	0.3	83,390	0.4
Greek Orthodox	172,271	1.2	239,766	1.3	316,605	1.5
Jehovah's Witnesses	34,596	0.2	68,018	0.4	174,810	0.8
Jewish	204,836	1.5	254,368	1.4	276,025	1.3
Lutheran	444,923	3.2	662,744	3.6	715,740	3.3
Mennonite ¹	125,938	0.9	152,452	0.8	181,800	0.8
Mormon	32,888	0.2	50,016	0.3	66,635	0.3
Pentecostal	95,131	0.7	143,877	0.8	220,390	1.0
Presbyterian	781,747	5.6	818,558	4.5	872,335	4.0
Roman Catholic	6,069,496	43.3	8,342,826	45.7	9,974,895	46.2
Salvation Army	70,275	0.5	92,054	0.5	119,665	0.6
Ukrainian (Greek) Catholic ²	191,051	1.4	189,653	1.0	227,730	1.1
United Church of Canada	2,867,271	20.5	3,664,008	20.1	3,768,800	17.5
Other	317,303	2.2	469,030 ²	2.6	1,330,480	6.2
Total	14,009,429	100.0	18,238,247	100.0	21,568,310	100.0

¹Includes "Hutterites".²Includes "Other Greek Catholic".

4.21 Country of birth of the population, 1951, 1961 and 1971

Country of birth	1951		1961		1971 ¹	
	No.	%	No.	%	No.	%
Canada ¹	11,949,518	85.3	15,393,984	84.4	18,272,780	84.7
United Kingdom	912,482	6.5	969,715	5.3	933,040	4.3
Other Commonwealth countries	20,567	0.1	47,887	0.3	170,100	0.8
United States	282,010	2.0	283,908	1.6	309,640	1.4

4.21 Country of birth of the population, 1951, 1961 and 1971 (concluded)

Country of birth	1951		1961		1971 ¹	
	No.	%	No.	%	No.	%
European countries	801,618	5.7	1,468,058	8.0	1,684,510	7.8
Germany	42,693	0.3	189,131	1.0	211,060	1.0
Italy	57,789	0.3	258,071	1.4	385,755	1.8
Netherlands	41,457	0.3	135,033	0.7	133,525	0.6
Poland	164,474	1.2	171,467	0.9	160,040	0.7
USSR	188,292	1.3	186,653	1.0	160,120	0.7
Other	306,913	2.2	527,703	2.9	634,010	2.9
Asiatic countries	37,145	0.3	57,761	0.3	119,425	0.6
Other	6,089	--	16,934	0.1	78,800	0.4
Total	14,009,429	100.0	18,238,247	100.0	21,568,310	100.0

¹For figures on province of birth, see Table 4.65.**4.22 Indian bands and registered population, by province and type of residence, Dec. 31, 1973**

Province or territory	Number of bands	Registered band membership			Total
		On reserves	Off reserves	Crown land	
Prince Edward Island	2	291	172	—	463
Nova Scotia	12	3,477	1,498	11	4,986
New Brunswick	15	3,372	1,351	—	4,723
Quebec	40	17,347	7,275	4,754	29,376
Ontario	111	34,172	20,666	4,567	59,405
Manitoba	55	26,938	10,140	2,007	39,085
Saskatchewan	68	27,214	11,655	1,249	40,118
Alberta	41	24,295	5,574	1,908	31,777
British Columbia	192	33,339	17,200	434	50,973
Yukon Territory	13	—	907	1,748	2,655
Northwest Territories	16	—	505	6,428	6,933
Canada	565	170,445	76,943	23,106	270,494

4.23 Households and average persons per household, by province, 1961, 1966 and 1971

Province or territory	Households			Average persons per household		
	1961	1966	1971	1961	1966	1971
Newfoundland	87,940	96,632	110,475	5.0	5.0	4.6
Prince Edward Island	23,942	25,360	27,895	4.2	4.2	3.9
Nova Scotia	175,341	185,245	208,425	4.0	4.0	3.7
New Brunswick	132,715	141,761	158,100	4.4	4.2	3.9
Quebec	1,191,469	1,389,115	1,605,750	4.2	4.0	3.7
Ontario	1,640,881	1,876,545	2,228,160	3.7	3.6	3.4
Manitoba	239,754	259,280	288,720	3.7	3.6	3.3
Saskatchewan	245,424	260,822	267,845	3.6	3.6	3.4
Alberta	349,816	393,707	464,945	3.7	3.6	3.4
British Columbia	459,534	543,075	668,305	3.4	3.3	3.2
Yukon Territory and Northwest Territories	7,920	8,931	12,685	4.2	4.3	4.0
Canada	4,554,736	5,180,473	6,041,305	3.9	3.7	3.5

4.24 Households by type, 1961, 1966 and 1971

Type of household	Number			Percentage		
	1961	1966	1971	1961	1966	1971
Family households	3,948,935	4,376,409	4,933,450	86.7	84.5	81.7
One-family households	3,780,992	4,246,753	4,812,360	83.0	82.0	79.7
Family of household head	3,734,581	4,209,549	4,773,900	82.0	81.3	79.0
Without additional persons	3,262,610	3,754,530	4,285,960	71.6	72.5	70.9
With additional persons	471,971	455,019	487,935	10.4	8.8	8.0
Family other than that of household head	46,411	37,204	38,465	1.0	0.7	0.6
Two-or-more family households	167,943	129,656	121,085	3.7	2.5	2.0
Including family of household head	165,703	128,325	120,000	3.6	2.5	2.0
With no family of household head	2,240	1,331	1,090	--	--	--
Non-family households	605,801	804,064	1,107,855	13.3	15.5	18.3
One person only	424,750	589,571	811,835	9.3	11.4	13.4
Two or more persons	181,051	214,493	296,020	4.0	4.1	4.9
Total households	4,554,736	5,180,473	6,041,300	100.0	100.0	100.0

4.25 Households by age and sex of head, 1961, 1966 and 1971

Age and sex of head	Number			Percentage		
	1961	1966	1971	1961	1966	1971
Under 25 years	179,725	269,065	414,470	3.9	5.2	6.9
Male	159,420	227,040	334,750	3.5	4.4	5.5
Female	20,305	42,025	79,720	0.4	0.8	1.3
25-34 years	938,389	1,014,676	1,265,290	20.6	19.6	20.9
Male	894,796	954,508	1,154,085	19.6	18.4	19.1
Female	43,593	60,168	111,205	1.0	1.2	1.8
35-44 years	1,072,159	1,190,133	1,252,500	23.5	23.0	20.7
Male	1,001,147	1,102,647	1,142,540	22.0	21.3	18.9
Female	71,012	87,486	109,960	1.6	1.7	1.8
45-54 years	936,625	1,052,705	1,173,055	20.6	20.3	19.4
Male	833,040	928,751	1,022,330	18.3	17.9	16.9
Female	103,585	123,954	150,725	2.3	2.4	2.5
55-64 years	681,014	803,338	955,995	15.0	15.5	15.8
Male	558,443	655,003	764,230	12.3	12.6	12.6
Female	122,571	148,335	191,765	2.7	2.9	3.2
65-69 years	266,099	298,002	358,775	5.8	5.8	5.9
Male	198,175	215,140	256,305	4.4	4.2	4.2
Female	67,924	82,862	102,475	1.5	1.6	1.7
70 years and over	480,725	552,554	621,220	10.6	10.7	10.3
Male	317,902	346,991	369,825	7.0	6.7	6.1
Female	162,823	205,563	251,395	3.6	4.0	4.2
Total household heads	4,554,736	5,180,473	6,041,300	100.0	100.0	100.0
Male	3,962,923	4,430,080	5,044,065	87.0	85.5	83.5
Female	591,813	750,393	997,240	13.0	14.5	16.5

4.26 Families and persons per family, by province, 1961, 1966 and 1971

Province or territory	Families			Average persons per family		
	1961	1966	1971	1961	1966	1971
Newfoundland	89,267	97,011	108,135	4.7	4.6	4.4
Prince Edward Island	21,969	22,728	24,260	4.2	4.2	4.0
Nova Scotia	161,894	166,237	180,720	4.0	4.0	3.8
New Brunswick	124,653	129,307	140,430	4.3	4.3	4.0
Quebec	1,103,822	1,229,301	1,357,185	4.2	4.2	3.9
Ontario	1,511,478	1,657,933	1,881,840	3.6	3.7	3.6
Manitoba	215,831	222,735	236,000	3.7	3.8	3.6
Saskatchewan	211,776	216,674	215,760	3.8	3.9	3.7
Alberta	305,671	331,158	382,110	3.8	3.9	3.7
British Columbia	394,023	445,297	533,625	3.6	3.6	3.5
Yukon Territory and Northwest Territories	7,060	7,885	10,620	4.3	4.5	4.3
Canada	4,147,444	4,526,266	5,070,680	3.9	3.9	3.7

4.27 Families by type, 1961, 1966 and 1971

Type of family	Number			Percentage		
	1961	1966	1971	1961	1966	1971
Maintaining own household	3,911,529	4,345,718	4,898,290	94.3	96.0	96.6
Not maintaining own household	235,915	180,548	172,390	5.7	4.0	3.4
Related	157,120	134,854	126,775	3.8	3.0	2.5
Not related	78,795	45,694	45,615	1.9	1.0	0.9
Lodging	72,416	38,583	40,705	1.7	0.8	0.8
Other	6,379	7,111	4,910	0.2	0.2	0.1
Total families	4,147,444	4,526,266	5,070,680	100.0	100.0	100.0

4.28 Husband-wife families and one-parent families by age of head, 1961, 1966 and 1971

Age of head	1961		1966		1971	
	No.	%	No.	%	No.	%
Husband-wife families	3,800,026	91.6	4,154,381	91.8	4,591,935	90.6
Under 25 years	174,574	4.2	214,742	4.7	292,885	5.8
25-34 years	920,871	22.2	945,374	20.9	1,087,900	21.4
35-44 years	989,141	23.8	1,069,471	23.6	1,072,485	21.2
45-54 years	792,269	19.1	874,492	19.3	940,320	18.5
55-64 years	505,109	12.2	593,864	13.1	684,335	13.5
65 years and over	418,062	10.1	456,438	10.1	514,015	10.1
One-parent families	347,418	8.4	371,885	8.2	478,745	9.4
Male	75,203	1.8	71,502	1.6	100,680	2.0
Under 25 years	1,510	--	2,407	--	4,225	0.1
25-34 years	6,551	0.2	5,559	0.1	16,535	0.3
35-44 years	11,684	0.3	12,176	0.3	22,215	0.4
45-54 years	15,671	0.4	15,918	0.4	22,525	0.4
55-64 years	13,522	0.3	13,313	0.3	16,375	0.3
65 years and over	26,265	0.6	22,129	0.5	18,805	0.4

4.28 Husband-wife families and one-parent families by age of head, 1961, 1966 and 1971 (concluded)

Age of head	1961		1966		1971	
	No.	%	No.	%	No.	%
One-parent families (concluded)						
Female	272,215	6.6	300,383	6.6	378,065	7.4
Under 25 years	10,993	0.3	12,542	0.3	25,295	0.5
25-34 years	30,662	0.7	36,327	0.8	66,665	1.3
35-44 years	52,498	1.3	59,515	1.3	78,350	1.5
45-54 years	59,539	1.4	68,592	1.5	85,165	1.7
55-64 years	46,578	1.1	50,480	1.1	59,505	1.2
65 years and over	71,945	1.7	72,927	1.6	63,090	1.2
Total family heads	4,147,444	100.0	4,526,266	100.0	5,070,680	100.0

4.29 Families by mother tongue of head, by province, 1971

Province or territory	Total family heads	Mother tongue of family head					
		English		French		Other	
		No.	%	No.	%	No.	%
Newfoundland	108,135	106,125	98.1	970	0.9	1,040	1.0
Prince Edward Island	24,260	22,230	91.6	1,665	6.8	365	1.6
Nova Scotia	180,720	165,320	91.5	10,520	5.8	4,880	2.7
New Brunswick	140,435	93,355	66.5	44,780	31.9	2,300	1.6
Quebec	1,357,185	180,890	13.3	1,070,380	78.9	105,910	7.8
Ontario	1,881,835	1,368,260	72.7	120,255	6.4	393,315	20.9
Manitoba	235,995	142,665	60.4	14,905	6.3	78,425	33.3
Saskatchewan	215,760	139,605	64.7	8,365	3.9	67,785	31.4
Alberta	382,115	266,850	69.8	12,340	3.2	102,925	27.0
British Columbia	533,630	412,035	77.2	11,500	2.2	110,095	20.6
Yukon Territory and Northwest Territories	10,615	5,995	56.5	430	4.0	4,200	39.5
Canada	5,070,680	2,903,325	57.2	1,296,105	25.6	871,250	17.2

4.30 Children living at home by age group and province, 1971¹

Province or territory	Under 6 years	6-14 years	15-18 years	19-24 years	Total children living at home
Newfoundland	74,245	117,845	44,255	23,050	259,400
Prince Edward Island	12,070	22,615	8,830	5,465	48,980
Nova Scotia	84,055	152,460	59,725	34,940	331,180
New Brunswick	69,660	129,785	52,565	31,655	283,670
Quebec	586,750	1,164,895	471,580	355,760	2,578,985
Ontario	771,305	1,409,820	532,285	328,480	3,041,890
Manitoba	102,575	179,925	70,815	39,610	392,920
Saskatchewan	95,755	180,540	72,325	31,220	379,840
Alberta	181,755	326,320	118,485	53,460	680,015
British Columbia	209,750	391,140	147,065	78,495	826,445
Yukon Territory and Northwest Territories	8,860	11,925	2,985	1,500	25,265
Canada	2,196,780	4,087,270	1,580,910	983,635	8,848,595

¹Figures in this table are slightly different from those published in the 1973 *Canada Year Book*. This is due to the fact that only preliminary data were available at that time.

4.31 Summary of principal vital statistics, by province, 1951-72

Province or territory and year	Live births		Deaths		Natural increase ¹		Marriages		Divorces	
	No.	Rate ²	No.	Rate ²	No.	Rate ²	No.	Rate ²	No.	Rate ²
NEWFOUNDLAND										
Av. 1951-55	13,101	34.1	2,926	7.6	10,175	26.5	2,836	7.4	5	1.3
" 1956-60	14,934	34.6	3,114	7.2	11,820	27.4	3,032	7.0	5	1.2
" 1961-65	15,104	31.8	3,142	6.6	11,962	25.2	3,331	7.0	5	1.0
" 1966-70	13,057	25.8	3,122	6.2	9,935	19.6	4,147	8.2	56	11.1
1971	12,767	24.5	3,199	6.1	9,568	18.4	4,685	9.0	150	28.7
1972	12,898	24.2	3,349	6.3	9,549	17.9	5,106	9.6	177	33.3
PRINCE EDWARD ISLAND										
Av. 1951-55	2,720	27.2	923	9.2	1,797	18.0	623	6.2	10	9.8
" 1956-60	2,674	26.6	953	9.5	1,721	17.1	645	6.4	4	3.9
" 1961-65	2,767	25.7	1,006	9.3	1,761	16.4	672	6.2	8	7.8
" 1966-70	2,063	18.9	1,020	9.4	1,044	9.6	817	7.5	45	41.3
1971	2,103	18.8	1,007	9.0	1,096	9.8	961	8.6	61	54.7
1972	2,010	17.8	1,052	9.3	958	8.5	1,013	9.0	65	57.5
NOVA SCOTIA										
Av. 1951-55	18,246	27.5	5,802	8.8	12,444	18.7	5,283	8.0	212	32.0
" 1956-60	19,097	26.9	6,062	8.5	13,035	18.4	5,289	7.4	227	32.0
" 1961-65	18,526	24.7	6,312	8.4	12,214	16.3	5,313	7.1	277	36.9
" 1966-70	14,217	18.7	6,622	8.7	7,594	10.0	6,335	8.3	573	75.4

4.31 Summary of principal vital statistics, by province, 1951-72 (concluded)

Province or territory and year	Live births		Deaths		Natural increase ¹		Marriages		Divorces	
	No.	Rate ²	No.	Rate ²	No.	Rate ²	No.	Rate ²	No.	Rate ²
NOVA SCOTIA (concluded)										
1971	14,250	18.1	6,682	8.5	7,568	9.6	6,883	8.7	721	91.4
1972	13,536	17.0	6,904	8.7	6,632	8.3	7,291	9.2	927	116.7
NEW BRUNSWICK										
Av. 1951-55	16,496	31.0	4,576	8.6	11,920	22.4	4,306	8.1	167	31.4
" 1956-60	16,567	29.0	4,640	8.1	11,927	20.9	4,357	7.6	194	34.0
" 1961-65	15,668	25.8	4,749	7.8	10,919	18.0	4,531	7.5	199	32.7
" 1966-70	11,984	19.3	4,873	7.8	7,112	11.4	5,481	8.8	267	42.9
1971	12,187	19.2	4,943	7.8	7,244	11.4	6,149	9.7	482	76.0
1972	11,806	18.4	4,982	7.8	6,824	10.6	6,455	10.0	466	72.5
QUEBEC										
Av. 1951-55	128,523	30.0	34,269	8.0	94,254	22.0	35,584	8.3	327	7.6
" 1956-60	139,844	28.6	35,714	7.3	104,130	21.3	36,798	7.5	403	8.2
" 1961-65	131,453	24.0	37,698	6.9	93,755	17.1	38,126	7.0	380	6.9
" 1966-70	99,068	16.8	39,475	6.7	59,592	10.1	46,768	7.9	2,018	34.1
1971	89,210	14.8	40,738	6.8	48,472	8.0	49,695	8.2	5,201	86.3
1972	83,603	13.8	42,311	7.0	41,292	6.8	53,830	8.9	6,421	106.1
ONTARIO										
Av. 1951-55	128,861	26.1	44,715	9.0	84,146	17.1	45,213	9.1	2,430	49.2
" 1956-60	152,688	26.4	49,431	8.5	103,257	17.9	46,482	8.0	2,801	48.4
" 1961-65	152,629	23.5	52,664	8.1	99,965	15.4	46,794	7.2	3,342	51.3
" 1966-70	130,166	17.8	55,415	7.6	74,751	10.2	62,216	8.5	7,452	102.1
1971	130,395	16.9	56,623	7.4	73,772	9.5	69,590	9.0	12,205	158.4
1972	125,060	16.0	58,905	7.5	66,155	8.5	72,278	9.2	13,183	168.5
MANITOBA										
Av. 1951-55	21,321	26.4	6,775	8.4	14,546	18.0	7,104	8.8	356	44.1
" 1956-60	22,408	25.6	7,293	8.3	15,115	17.3	6,600	7.5	315	35.9
" 1961-65	22,137	23.4	7,637	8.1	14,500	15.3	6,674	7.1	376	39.7
" 1966-70	17,734	18.3	7,868	8.1	9,865	10.2	8,283	8.5	805	82.9
1971	18,031	18.2	8,025	8.1	10,006	10.1	9,127	9.2	1,383	140.0
1972	17,398	17.6	8,225	8.3	9,173	9.3	9,181	9.3	1,413	142.5
SASKATCHEWAN										
Av. 1951-55	23,554	27.5	6,547	7.6	17,007	19.9	6,876	8.0	231	26.9
" 1956-60	24,046	26.9	6,753	7.5	17,293	19.4	6,395	7.1	247	27.6
" 1961-65	22,811	24.4	7,268	7.8	15,543	16.6	6,316	6.7	298	31.8
" 1966-70	17,852	18.7	7,466	7.8	10,386	10.9	7,460	7.8	566	59.3
1971	16,054	17.3	7,413	8.0	8,641	9.3	7,813	8.4	815	88.0
1972	15,473	16.9	7,590	8.3	7,883	8.6	7,877	8.6	826	90.1
ALBERTA										
Av. 1951-55	31,087	30.6	7,527	7.4	23,560	23.2	9,750	9.6	612	60.4
" 1956-60	36,920	30.6	8,329	6.9	28,591	23.7	10,230	8.5	788	65.1
" 1961-65	37,004	26.5	9,317	6.7	27,687	19.8	10,581	7.6	1,226	87.5
" 1966-70	30,851	20.2	9,839	6.4	21,012	13.8	13,711	9.0	2,481	162.4
1971	30,545	18.8	10,525	6.5	20,020	12.3	15,614	9.6	3,656	224.6
1972	29,282	17.7	10,699	6.5	18,583	11.2	16,345	9.9	3,767	227.8
BRITISH COLUMBIA										
Av. 1951-55	31,347	25.1	12,233	9.8	19,114	15.3	11,131	8.9	1,461	116.9
" 1956-60	38,930	25.7	13,980	9.2	24,950	16.5	11,955	7.9	1,514	100.0
" 1961-65	36,753	21.5	15,236	8.9	21,517	12.6	11,927	7.0	1,592	93.1
" 1966-70	34,266	17.1	16,737	8.3	17,529	8.7	17,186	8.6	3,272	163.1
1971	34,852	16.0	17,783	8.1	17,069	7.9	20,389	9.3	4,926	225.5
1972	34,563	15.4	18,021	8.0	16,542	7.4	20,659	9.2	5,036	224.1
YUKON TERRITORY										
Av. 1951-55	413	43.0	90	9.4	323	33.6	94	9.8	..	..
" 1956-60	505	39.4	91	7.1	414	32.3	109	8.5	..	..
" 1961-65	509	34.9	87	6.0	422	28.9	107	7.3	17	118.0
" 1966-70	407	27.1	89	5.9	319	21.3	153	10.2	31	206.7
1971	506	27.5	104	5.7	402	21.8	166	9.0	47	255.6
1972	451	23.9	103	5.5	348	18.4	181	9.5	47	248.7
NORTHWEST TERRITORIES										
Av. 1951-55	666	40.1	284	17.1	382	23.0	115	6.9	..	..
" 1956-60	943	46.7	310	15.3	633	31.4	155	7.7	1	..
" 1961-65	1,174	45.9	250	9.8	924	36.1	154	6.0	3	11.5
" 1966-70	1,244	41.5	220	7.6	1,015	33.8	212	7.1	13	43.3
1971	1,287	37.0	230	6.6	1,057	30.4	252	7.2	25	71.8
1972	1,239	34.4	272	7.6	967	26.8	254	7.1	36	100.0
CANADA										
Av. 1951-55	416,334	28.0	126,666	8.5	289,668	19.5	128,915	8.7	5,811	39.1
" 1956-60	469,555	27.6	136,669	8.0	332,886	19.6	132,047	7.8	6,498	38.2
" 1961-65	456,534	24.1	145,368	7.7	311,166	16.4	134,524	7.1	7,723	40.7
" 1966-70	372,909	18.0	152,755	7.4	220,154	10.6	172,769	8.3	17,579	84.8
1971	362,187	16.8	157,272	7.3	204,915	9.5	191,324	8.9	29,672	137.6
1972	347,319	15.9	162,413	7.4	184,906	8.5	200,470	9.2	32,364	148.3

¹Excess births over deaths.²Per 1,000 population.³Per 100,000 population.

4.32 Summary of principal vital statistics for cities, towns and other municipal subdivisions¹ of 50,000 population and over², 1972 with averages for 1961-65 and 1966-70

Province and urban centre	Live births			Deaths			Marriages ³		
	Av. 1961-65	Av. 1966-70	1972	Av. 1961-65	Av. 1966-70	1972	Av. 1961-65	Av. 1966-70	1972
NEWFOUNDLAND									
*St. John's, c	1,966	1,812	1,831	542	608	646	736	932	1,117
PRINCE EDWARD ISLAND									
Charlottetown, c ⁴	417	307	291	232	246	238	157	157	287
NOVA SCOTIA									
Dartmouth, c	1,700	1,409	1,413	230	261	290	287	379	516
*Halifax, c	2,109	1,791	1,906	736	855	959	1,047	1,281	1,519
NEW BRUNSWICK									
*Saint John, c	1,743	1,598	1,611	690	766	864	607	728	880
QUEBEC									
*Hull, c	1,640	1,289	1,232	419	423	419	430	520	598
LaSalle, c	1,062	1,371	1,277	210	295	360	128	222	304
Laval, c	3,939	3,372	2,852	669	902	1,105	599	968	1,205
*Longueuil, c	639	1,674	1,933	225	442	531	185	567	744
*Montreal, c	28,576	20,066	13,900	10,309	10,462	10,465	10,548	11,766	12,101
*Montreal North, c	1,453	1,490	1,555	343	382	474	215	386	505
*Quebec, c	3,601	2,672	2,531	1,612	1,587	1,800	1,536	1,683	1,836
*Ste-Foy, c	1,038	1,098	1,004	158	190	233	130	389	543
*St-Laurent, t	1,059	948	751	272	352	409	287	401	430
*St-Léonard, c	316	834	1,045	45	124	185	22	170	289
Sherbrooke, c	1,812	1,505	1,323	590	592	583	572	698	894
*Trois-Rivières, c	1,384	947	682	438	433	456	447	475	519
Verdun, c	1,547	1,119	804	606	665	705	528	636	619
ONTARIO									
*Brantford, c	1,191	1,045	1,044	550	622	608	489	612	709
*Burlington, t	1,203	1,347	1,334	274	324	383	246	415	512
*Etobicoke, b	5,117	4,081	3,586	1,311	1,502	1,785	881	1,215	1,518
*Guelph, c	1,010	996	1,007	364	405	418	352	509	593
*Hamilton, c	6,467	5,475	4,629	2,447	2,495	2,604	2,351	2,946	3,008
*Kingston, c	1,363	1,126	985	481	523	584	527	718	804
*Kitchener, c	2,081	2,131	2,082	564	670	693	655	1,009	1,210
*London, c	4,129	3,752	3,765	1,482	1,576	1,664	1,387	1,914	2,135
*Mississauga, t	1,697	2,402	3,254	344	458	629	287	511	957
*Niagara Falls, c	1,151	1,030	898	441	456	526	416	549	633
*Oakville, c	905	913	946	186	227	281	223	450	518
Oshawa, c	1,769	1,686	1,697	459	509	550	545	691	824
Ottawa, c	6,034	4,745	3,971	2,271	2,443	2,403	2,209	3,051	3,788
*Peterborough, c	1,035	890	838	442	489	511	384	571	629
*St. Catharines, c	1,910	1,764	1,800	696	791	883	666	909	1,074
Sarnia, c	1,220	1,034	884	358	399	424	373	537	692
*Sault Ste. Marie, c	1,439	1,512	1,444	385	487	509	488	645	823
Scarborough, b	6,419	5,150	5,199	1,237	1,546	1,834	962	1,765	2,110
*Sudbury, c	2,353	1,881	1,851	525	560	560	706	928	1,061
Thunder Bay, c	1,998	1,682	1,727	835	909	1,028	745	951	1,072
*Toronto, c	15,362	13,680	11,461	7,354	6,737	6,468	10,293	13,413	14,644
*Windsor, c	2,498	3,654	3,278	1,274	1,708	1,716	1,217	1,907	2,144
*York, b	3,497	3,101	2,810	1,022	1,009	1,019	488	523	574
*York, E., b	1,852	1,693	1,696	853	865	946	184	185	251
York, N., b	7,967	8,547	8,255	1,551	2,134	2,758	943	1,617	2,150
MANITOBA									
*St. James-Assiniboia, c	736	715	^s	260	303	^s	232	388	^s
*Winnipeg, c	5,788	4,631	8,943	2,672	2,708	4,407	2,620	3,180	5,503
SASKATCHEWAN									
*Regina, c	3,265	2,840	2,703	820	928	1,041	1,004	1,263	1,367
*Saskatoon, c	2,770	2,676	2,360	769	911	1,021	923	1,281	1,289
ALBERTA									
*Calgary, c	8,083	7,503	7,257	2,002	2,238	2,390	2,410	3,483	4,301
*Edmonton, c	9,704	8,776	7,769	2,014	2,224	2,624	3,209	4,428	5,076
BRITISH COLUMBIA									
*Burnaby, dm	2,057	1,837	1,723	769	857	900	530	798	863
Coquitlam, dm	745	793	755	147	181	250	105	175	235
*North Vancouver, dm	864	797	817	228	233	245	140	251	334
Richmond, dm	1,093	898	970	231	265	305	171	291	448
Saanich, dm	1,042	827	743	416	485	504	199	334	351
Surrey, dm	1,761	1,577	1,599	550	637	701	288	451	638
Vancouver, c	6,743	6,317	4,992	4,758	4,928	4,996	3,881	5,044	4,969
Victoria, c	972	804	780	898	1,001	1,081	671	925	1,193

¹Figures for certain subdivisions may not be comparable for the periods shown because of changes in area boundaries, particularly for those indicated by an asterisk: c=city, t=town, b=borough, and dm=district municipality.

²As at the date of the 1971 Census.

³By place of occurrence.

⁴Population fewer than 50,000 at date of 1971 Census but included as the largest urban centre in Prince Edward Island.

⁵Amalgamated with city of Winnipeg.

4.33 Live births, by age of parents, 1972¹

Age group	Legitimate		Mothers		Illegitimate mothers	
	Fathers					
	No.	%	No.	%	No.	%
Under 20 years	5,916	1.9	25,988	8.5	13,949	47.1
Under 15 years	—	—	27	--	270	0.9
15 years	2	--	297	0.1	926	3.1
16 "	33	--	1,576	0.5	2,289	7.7
17 "	424	0.1	4,384	1.4	3,424	11.6
18 "	1,722	0.6	8,169	2.7	3,673	12.4
19 "	3,735	1.2	11,535	3.8	3,367	11.4
20-24 "	65,459	21.6	104,985	34.5	9,398	31.8
25-29 "	113,723	37.5	106,515	35.0	3,687	12.5
30-34 "	68,677	22.6	45,305	14.9	1,574	5.3
35-39 "	30,692	10.1	16,784	5.5	752	2.5
40-44 "	13,131	4.3	4,480	1.5	221	0.7
45-49 "	4,294	1.4	334	0.1	16	0.1
50 years and over	1,696	0.6	2	--	2	--
Total, stated ages	303,588	100.0	304,393	100.0	29,599	100.0
Age not stated	921	...	116	...	313	...
Total, all ages	304,509	...	304,509	...	29,912	...

¹Excludes Newfoundland.

4.34 Number of live-born children in order of birth, by age of mother, 1972¹

Order of birth of child	Age of mother									% of total	
	Under 15	15-19	20-24	25-29	30-34	35-39	40-44	45 and over	Age not stated		All ages
1st child	296	32,904	60,716	35,745	7,881	1,866	355	15	329	140,107	41.9
2nd "	1	6,030	39,515	41,416	12,996	2,918	528	29	32	103,465	30.9
3rd "	—	640	10,677	20,752	11,632	3,373	585	28	14	47,701	14.3
4th "	—	61	2,587	7,658	6,924	2,918	584	25	10	20,767	6.2
5th "	—	3	679	2,718	3,366	2,094	597	43	5	9,505	2.8
6th "	—	—	156	1,100	1,774	1,477	470	42	1	5,020	1.5
7th "	—	—	35	487	987	888	363	27	1	2,788	0.8
8th "	—	—	9	207	583	658	304	24	2	1,787	0.6
9th "	—	—	4	82	351	483	225	32	1	1,178	0.4
10th "	—	—	—	28	190	345	195	27	3	788	0.2
11th "	—	—	—	3	114	211	159	11	—	498	0.1
12th "	—	—	—	3	46	132	112	23	—	316	0.1
13th "	—	—	—	—	16	92	72	8	1	189	0.1
14th "	—	—	—	—	12	39	65	7	—	123	0.1
15th "	—	—	—	—	3	24	39	10	—	76	--
16th "	—	—	—	—	—	9	22	1	—	32	--
17th "	—	—	—	—	—	7	17	1	—	25	--
18th "	—	—	—	—	—	2	6	—	—	8	--
19th "	—	—	—	—	—	—	3	—	—	3	--
20th and over	—	—	—	—	—	—	—	1	—	1	--
Not stated	—	2	5	3	4	—	—	—	30	44	--
Total	297	39,640	114,383	110,202	46,879	17,536	4,701	354	429	334,421	100.0

¹Excludes Newfoundland.

4.35 Percentage distribution of total live births, by order of birth, 1951-72¹

Year	1st child	2nd child	3rd child	4th and later children	Total
1951	28.3	25.4	17.2	29.1	100.0
1956	26.7	24.0	17.8	31.5	100.0
1961	25.9	23.2	18.0	32.9	100.0
1966	33.1	24.8	16.2	25.9	100.0
1967	36.0	25.7	15.4	22.9	100.0
1968	37.8	26.7	15.1	20.3	100.0
1969	38.5	27.5	15.2	18.8	100.0
1970	39.9	28.0	15.2	16.9	100.0
1971	40.6	29.3	14.9	15.2	100.0
1972	41.9	30.9	14.3	12.9	100.0

¹Excludes Newfoundland.

4.36 Illegitimate live births and percentage of total live births, by province, 1951-72

Year	Nfld.	PEI	NS	NB	Que.	Ont.	Man.	Sask.	Alta.	BC	YT	NWT	Canada
	<i>Number</i>												
Av. 1951-55	426	139	1,082	659	4,086	4,065	969	1,044	1,481	1,898	53	50	15,951
" 1956-60	587	139	1,201	687	4,675	4,891	1,166	1,194	1,941	2,505	72	102	19,160
" 1961-65	716	132	1,437	803	5,595	6,519	1,672	1,565	2,786	3,137	91	152	24,605
" 1966-70	959	150	1,550	935	6,934	9,385	2,072	2,054	3,644	4,507	94	229	32,513

4.36 Illegitimate live births and percentage of total live births, by province, 1951-72 (concluded)

Year	Nfld.	PEI	NS	NB	Que.	Ont.	Man.	Sask.	Alta.	BC	YT	NWT	Canada
<i>Number</i>													
1971	1,229	171	1,664	1,177	7,087	8,492	2,338	2,257	3,638	4,236	125	279	32,693
1972	1,345	171	1,662	1,193	6,161	8,437	2,255	2,237	3,456	3,930	100	310	31,257
<i>Percentage of total live births</i>													
Av. 1951-55	3.2	5.1	5.9	4.0	3.2	3.2	4.5	4.4	4.8	6.1	12.9	7.5	3.8
“ 1956-60	3.9	5.2	6.3	4.1	3.3	3.2	5.2	5.0	5.3	6.4	14.2	10.8	4.1
“ 1961-65	4.7	4.8	7.8	5.1	4.3	4.3	7.6	6.9	7.5	8.5	17.8	13.0	5.4
“ 1966-70	7.3	7.3	11.1	7.8	7.0	7.2	11.7	11.5	11.8	13.2	23.1	18.4	8.7
1971	9.6	8.1	11.7	9.7	7.9	6.5	13.0	14.1	11.9	12.2	24.7	21.7	9.0
1972	10.4	8.5	12.3	10.1	7.4	6.7	13.0	14.5	11.8	11.4	22.2	25.0	9.0

4.37 Stillbirths and ratio per 1,000 live births, by province, 1951-72¹

Year	Nfld.	PEI	NS	NB	Que.	Ont.	Man.	Sask.	Alta.	BC	YT	NWT	Canada
<i>Number (28 weeks or more gestation)</i>													
Av. 1951-55	222	52	337	291	2,705	2,017	336	313	425	374	6	11	7,088
“ 1956-60	274	46	304	267	2,446	1,992	301	262	388	418	5	12	6,714
“ 1961-65	261	47	256	220	1,727	1,818	278	242	358	370	5	19	5,600
“ 1966-70	171	28	181	158	1,074	1,402	195	174	278	311	4	20	3,996
1971	158	23	139	138	807	1,221	164	159	254	310	6	17	3,396
1972	121	22	124	137	685	1,159	173	140	229	238	6	12	3,046
<i>Ratio</i>													
Av. 1951-55	17.0	19.0	18.4	17.7	21.0	15.6	15.7	13.3	13.7	11.9	14.1	16.5	17.0
“ 1956-60	18.3	17.1	15.9	16.1	17.5	13.0	13.4	10.9	10.5	10.7	10.7	12.3	14.3
“ 1961-65	17.3	17.1	13.8	14.0	13.1	11.9	12.5	10.6	9.7	10.1	9.0	16.0	12.3
“ 1966-70	13.0	13.5	12.7	13.1	10.8	10.7	10.9	9.7	9.0	9.0	9.8	16.0	10.7
1971	12.4	10.9	9.8	11.3	9.0	9.4	9.1	9.9	8.3	8.9	11.9	13.2	9.4
1972	9.4	10.9	9.2	11.6	8.2	9.3	9.9	9.0	7.8	6.9	13.3	9.7	8.8

¹Excludes Newfoundland.

4.38 Stillbirths and ratio per 1,000 live births, by age of mother, 1972¹

Age group of mother	Live births	Stillbirths	Stillbirth ratio per 1,000 live births
Under 20 years	39,937	356	8.9
20-24 “	114,383	841	7.4
25-29 “	110,202	804	7.3
30-34 “	46,879	495	10.6
35-39 “	17,536	270	15.4
40-44 “	4,701	143	30.4
45-49 “	350	12	34.3
50 years and over	4	—	—
Age not stated	429	4	9.3
Total, all ages	334,421	2,925	8.7

¹Excludes Newfoundland.

4.39 Age-specific fertility rate and gross reproduction rate per 1,000 women, 1926-72¹

Year and province or territory	Age group							Total fertility rate	Gross reproduction rate
	15-19	20-24	25-29	30-34	35-39	40-44	45-49		
Canada									
1926	29.0	139.9	177.4	153.8	114.6	50.7	6.0	3,357	1.628
1931	29.9	137.1	175.1	145.3	103.1	44.0	5.5	3,200	1.555
1936	25.7	112.1	144.3	126.5	90.0	36.3	4.4	2,696	1.310
1941	30.7	138.4	159.8	122.3	80.0	31.6	3.7	2,832	1.377
1946	36.5	169.6	191.4	146.0	93.1	34.5	3.8	3,374	1.640
1951	48.1	188.7	198.8	144.5	86.5	30.9	3.1	3,503	1.701
1956	55.9	222.2	220.1	150.3	89.6	30.8	2.9	3,858	1.874
1961	58.2	233.6	219.2	144.9	81.1	28.5	2.4	3,840	1.868
1966	48.2	169.1	163.5	103.3	57.5	19.1	1.7	2,812	1.369
1971	40.1	134.6	142.3	77.4	33.6	9.4	0.6	2,190	1.061
1972	38.5	119.8	137.1	72.1	28.9	7.8	0.6	2,024	0.982
1972									
Prince Edward Island	47.8	151.2	170.2	86.6	51.5	12.4	1.5	2,606	1.237
Nova Scotia	56.3	134.5	146.3	76.8	34.8	10.9	0.7	2,302	1.133
New Brunswick	56.7	152.8	149.0	83.4	35.9	13.1	1.0	2,460	1.176
Quebec	17.9	94.1	124.7	69.9	29.6	8.4	0.7	1,727	0.836
Ontario	42.7	122.2	138.6	72.8	27.2	6.4	0.3	2,051	0.993
Manitoba	53.0	136.7	157.6	83.1	35.9	9.8	0.6	2,384	1.160
Saskatchewan	52.8	156.7	165.8	84.2	37.6	12.7	1.0	2,554	1.251
Alberta	52.4	143.1	148.7	68.8	27.9	7.2	0.6	2,244	1.087
British Columbia	46.1	127.8	133.7	64.5	22.3	5.5	0.4	2,002	0.979
Yukon Territory	96.3	158.9	163.3	80.0	48.0	6.0	2.5	2,775	1.329
Northwest Territories	149.3	238.2	210.0	126.7	88.0	43.8	16.7	4,364	2.103

¹Excludes Newfoundland.

4.40 Percentage change in death rate for each age group, by sex, 1951-72

Age group	Male	Female	Age group	Male	Female
Under 1 year	-55.5	-55.9	50-54 years	-10.6	-24.7
1-4 years	-52.4	-55.6	55-59 "	-9.9	-27.6
5-9 "	-50.0	-57.1	60-64 "	-6.2	-29.9
10-14 "	-37.5	-40.0	65-69 "	+1.0	-29.0
15-19 "	+1.1	-33.3	70-74 "	-2.0	-30.0
20-24 "	+1.1	-50.0	75-79 "	-9.9	-34.2
25-29 "	-16.7	-36.4	80-84 "	-9.5	-33.2
30-34 "	-19.0	-40.0	85 years and over	-9.0	-25.3
35-39 "	-12.0	-30.0			
40-44 "	-7.7	-30.0	All ages	-13.9	-20.6
45-49 "	-12.6	-31.2			

4.41 Numerical and percentage distribution of deaths by age group and sex, 1961, 1966 and 1971

Age group	Distribution									% change in death rate 1961-71
	1961			1966			1971			
	No.	%	Rate ^a	No.	%	Rate ^a	No.	%	Rate ^a	
Male										
Under 1 year	7,447	9.0	30.5	5,138	5.8	25.8	3,712	4.1	19.9	-34.8
1-4 years	1,154	1.4	1.3	988	1.1	1.1	679	0.7	0.9	-30.8
5-9 "	672	0.8	0.6	669	0.8	0.6	641	0.7	0.6	—
10-14 "	527	0.6	0.6	620	0.7	0.6	589	0.6	0.5	-16.7
15-19 "	840	1.0	1.2	1,212	1.4	1.3	1,489	1.6	1.4	+16.7
20-24 "	969	1.2	1.7	1,324	1.5	1.8	1,697	1.9	1.8	+5.9
25-29 "	895	1.1	1.5	980	1.1	1.6	1,176	1.3	1.5	—
30-34 "	1,041	1.3	1.6	1,054	1.2	1.7	1,090	1.2	1.6	—
35-39 "	1,422	1.7	2.3	1,456	1.7	2.2	1,416	1.5	2.2	-4.3
40-44 "	1,916	2.3	3.4	2,146	2.4	3.4	2,310	2.5	3.6	+5.9
45-49 "	2,993	3.6	5.8	3,111	3.5	5.7	3,523	3.8	5.7	-1.7
50-54 "	4,242	5.1	9.6	4,855	5.5	9.7	4,839	5.3	9.3	-3.1
55-59 "	5,494	6.6	15.2	6,352	7.2	15.4	6,887	7.5	14.6	-3.9
60-64 "	7,028	8.5	24.0	7,911	9.0	24.0	8,755	9.5	22.9	-4.6
65-69 "	8,545	10.3	35.7	9,226	10.5	36.2	10,279	11.2	34.7	-2.8
70-74 "	10,582	12.8	54.0	10,549	12.0	53.1	10,663	11.6	51.9	-3.9
75-79 "	10,970	13.3	81.8	11,102	12.6	79.9	11,058	12.1	79.0	-3.4
80-84 "	8,635	10.4	125.1	10,006	11.4	124.0	10,182	11.1	118.8	-5.0
85 years and over	7,337	8.9	208.9	9,214	10.5	213.4	10,838	11.8	198.5	-5.0
Total, all ages	82,709	100.0	9.0	87,913	100.0	8.7	91,823	100.0	8.5	-5.6
Female										
Under 1 year	5,493	9.4	23.7	3,822	6.2	20.2	2,644	4.0	15.1	-36.3
1-4 years	844	1.4	1.0	775	1.3	0.9	551	0.8	0.8	-20.0
5-9 "	405	0.7	0.4	480	0.8	0.4	424	0.7	0.4	—
10-14 "	278	0.5	0.3	318	0.5	0.3	365	0.6	0.3	—
15-19 "	322	0.6	0.5	467	0.8	0.5	579	0.9	0.6	+20.0
20-24 "	342	0.6	0.6	403	0.7	0.5	559	0.9	0.6	—
25-29 "	418	0.7	0.7	384	0.6	0.6	485	0.7	0.6	-14.3
30-34 "	562	1.0	0.9	564	0.9	0.9	565	0.9	0.9	—
35-39 "	880	1.5	1.4	845	1.4	1.3	815	1.2	1.3	-7.1
40-44 "	1,099	1.9	2.0	1,293	2.1	2.0	1,290	2.0	2.1	+5.0
45-49 "	1,617	2.8	3.2	1,823	2.9	3.3	1,901	2.9	3.0	-6.2
50-54 "	2,237	3.8	5.3	2,434	3.9	5.0	2,480	3.8	4.6	-13.2
55-59 "	2,749	4.7	8.0	3,115	5.0	7.7	3,477	5.3	7.2	-10.0
60-64 "	3,725	6.4	12.8	4,064	6.0	12.2	4,345	6.6	11.0	-14.1
65-69 "	5,304	9.1	21.4	5,393	8.7	19.5	5,614	8.6	17.3	-19.2
70-74 "	7,058	12.1	34.2	7,063	11.4	30.9	7,138	10.9	28.3	-17.3
75-79 "	8,290	14.2	59.2	8,695	14.0	53.9	8,930	13.6	48.1	-18.7
80-84 "	8,871	13.5	101.2	9,048	14.6	93.6	9,763	14.9	82.4	-18.6
85 years and over	8,782	15.1	192.2	10,964	17.7	183.4	13,524	20.7	163.3	-15.0
Total, all ages	58,276	100.0	6.5	61,950	100.0	6.2	65,449	100.0	6.1	-6.2
	1961			1966			1971			
	Male	Female		Male	Female		Male	Female		
Average age at death	59.7	63.1		62.0	65.9		63.3	68.2		
Median age at death ^a	67.9	72.2		68.4	73.5		68.5	74.7		

¹Per 1,000 population per age group.

²The age above and below which half of the total number of annual deaths occurred.

4.42 Deaths and rate per 100,000 population according to the International Abbreviated List of 50 Causes, 1972

Abbreviated "B" List No.	Detailed List No.	Cause (eighth revision)	Deaths	Rate per 100,000 population
1	000	Cholera	—	—
2	001	Typhoid fever	—	—
3	004,006	Bacillary dysentery and amœbiasis	8	1
4	008,009	Enteritis and other diarrhoeal diseases	298	1.4
5	010-012	Tuberculosis of respiratory system	292	1.3
6	013-019	Other tuberculosis, including late effects	161	0.7
7	020	Plague	—	—

4.42 Deaths and rate per 100,000 population according to the International Abbreviated List of 50 Causes, 1972 (concluded)

Abbreviated "B" List No.	Detailed List No.	Cause (eighth revision)	Deaths	Rate per 100,000 population
8	032	Diphtheria	1	¹
9	033	Whooping cough	1	¹
10	034	Streptococcal sore throat and scarlet fever	—	—
11	036	Meningococcal infection	76	0.3
12	040-043	Acute poliomyelitis	—	—
13	050	Smallpox	—	—
14	055	Measles	2	¹
15	080-083	Typhus and other rickettsioses	—	—
16	084	Malaria	—	—
17	090-097	Syphilis and its sequelæ	41	0.2
18	000-136	All other infective and parasitic diseases	384	1.8
19	140-209	Malignant neoplasms, including neoplasms of lymphatic and hæmatopoietic tissue	32,265	147.9
20	210-239	Benign neoplasms and neoplasms of unspecified nature	297	1.4
21	250	Diabetes mellitus	3,133	14.4
22	260-269	Avitaminoses and other nutritional deficiency	169	0.8
23	280-285	Anæmias	330	1.5
24	320	Meningitis	115	0.5
25	390-392	Active rheumatic fever	18	0.1
26	393-398	Chronic rheumatic heart disease	1,253	5.7
27	400-404	Hypertensive disease	1,692	7.8
28	410-414	Ischæmic heart disease	50,119	229.7
29	420-429	Other forms of heart disease	3,679	16.9
30	430-438	Cerebrovascular disease	16,586	76.0
31	470-474	Influenza	671	3.1
32	480-486	Pneumonia	5,154	23.6
33	490-493	Bronchitis, emphysema and asthma	3,487	16.0
34	531-533	Peptic ulcer	816	3.7
35	540-543	Appendicitis	90	0.4
36	550-553, 560	Intestinal obstruction and hernia	667	3.1
37	571	Cirrhosis of liver	2,236	10.2
38	580-584	Nephritis and nephrosis	659	3.0
39	600	Hyperplasia of prostate	213	2.0 ^a
40	640-645	Abortion	1	^a
41 {	630-639	Other complications of pregnancy, childbirth and the puerperium	53	0.5 ⁴
42 {	650-678			
43 {	740-759	Congenital anomalies	1,925	8.8
44 {	764-768			
45 {	772, 776	Birth injury, difficult labour and other anoxic and hypoxic conditions	1,371	6.3
46 {	760-763, 769-771	Other causes of perinatal mortality	1,571	7.2
47 {	773-775, 777-779			
48 {	780-796	Symptoms and ill-defined conditions	1,252	5.7
49 {	240-738	All other diseases	14,976	68.6
50 {	E810-E823	Motor vehicle accidents	6,308	28.9
	E800-E807	All other accidents	6,517	29.9
	E825-E949			
	E950-E959	Suicide and self-inflicted injuries	2,657	12.2
	E960-E999	All other external causes	869	4.0
		All causes	162,413	744.3

¹Less than 0.1 per 100,000 population.

²Per 100,000 males.

³Less than 0.1 per 100,000 live births.

⁴Per 100,000 females.

4.43 Leading causes of death, by sex at various age groups, 1972

Cause	Male		Cause	Female	
	No.	Rate ¹		No.	Rate ¹
Under 1 year			Under 1 year		
Congenital anomalies	725	405.5	Congenital anomalies	605	359.0
Anoxia and hypoxia	667	373.1	Anoxia and hypoxia	465	275.9
Immaturity	386	215.9	Immaturity	308	182.8
Pneumonia	256	143.2	Pneumonia	171	101.5
Conditions of placenta and umbilical cord	190	106.3	Conditions of placenta and umbilical cord	118	70.0
1-4 years			1-4 years		
Accidents	342	46.7	Accidents	174	24.9
Congenital anomalies	90	12.3	Congenital anomalies	89	12.7
Cancer	83	11.3	Cancer	62	8.9
Pneumonia	38	5.2	Pneumonia	44	6.3
Meningitis	12	1.6	Enteritis and other diarrhœal diseases	16	2.3
5-19 years			5-19 years		
Accidents	2,038	59.8	Accidents	719	22.1
Cancer	268	7.9	Cancer	156	4.8
Suicide	173	5.1	Congenital anomalies	85	2.6
Congenital anomalies	83	2.4	Suicide	52	1.6
Cardiovascular diseases	58	1.7	Pneumonia	38	1.2

4.43 Leading causes of death, by sex at various age groups, 1972 (concluded)

Cause	Male		Cause	Female	
	No.	Rate ^a		No.	Rate ^a
20-44 years			20-44 years		
Accidents	3,561	94.2	Cancer	1,020	27.5
Cardiovascular diseases	1,303	34.5	Accidents	782	21.1
Suicide	942	24.9	Cardiovascular diseases	539	14.6
Cancer	881	23.3	Suicide	374	10.1
Cirrhosis of liver	224	5.9	Cirrhosis of liver	101	2.7
45-64 years			45-64 years		
Cardiovascular diseases	11,983	592.0	Cancer	5,246	252.6
Cancer	5,846	288.8	Cardiovascular diseases	4,157	200.1
Accidents	1,759	86.9	Accidents	660	31.8
Cirrhosis of liver	855	42.2	Cirrhosis of liver	388	18.7
Bronchitis, emphysema and asthma	631	31.2	Diabetes mellitus	322	15.5
65 years and over			65 years and over		
Cardiovascular diseases	31,942	4,029.5	Cardiovascular diseases	29,739	2,988.8
Cancer	10,801	1,362.6	Cancer	7,886	792.6
Pneumonia	2,100	264.9	Pneumonia	1,758	176.7
Bronchitis, emphysema and asthma	2,094	264.2	Diabetes mellitus	1,355	136.2
Accidents	1,328	167.5	Accidents	1,177	118.3
All ages			All ages		
Cardiovascular diseases	45,303	415.1	Cardiovascular diseases	34,478	316.1
Cancer	17,886	163.9	Cancer	14,379	131.8
Accidents	9,197	84.3	Accidents	3,628	33.3
Pneumonia	2,853	26.1	Pneumonia	2,301	21.1
Bronchitis, emphysema and asthma	2,834	26.0	Diabetes mellitus	1,722	15.8

^aUnder one year rates are per 100,000 live births; all other age group rates are per 100,000 population.

4.44 Infant deaths and stillbirths, by province and sex, 1951-72

Province or territory and year	Infant deaths (<1 yr)			Neonatal deaths (<28 days)					Post- neo- natal deaths (28 days to 1 yr)	Still- births (>27 weeks gesta- tion)	Perinatal deaths (Stillbirths plus deaths < 7 days) ¹
	Male	Female	Total	Male	Female	Total	<7 days	7-27 days			
NEWFOUNDLAND											
Number											
1951	361	276	637	176	112	288	209	79	349	189	398
1961	335	253	588	197	128	325	269	56	263	281	550
1971	173	120	293	123	84	207	175	32	86	158	333
1972	148	119	267	97	77	174	161	13	93	121	282
Rate ¹											
1951	60.3	48.0	54.3	29.4	19.5	24.5	17.8	6.7	29.8	16.1	33.4
1961	41.7	33.5	37.7	24.5	16.9	20.8	17.3	3.6	16.9	18.0	34.7
1971	26.3	19.4	22.9	18.7	13.5	16.2	13.7	2.5	6.7	12.4	25.8
1972	22.4	18.9	20.7	14.7	12.3	13.5	12.5	1.0	7.2	9.4	21.7
PRINCE EDWARD ISLAND											
Number											
1951	60	30	90	29	17	46	33	13	44	56	89
1961	55	38	93	29	25	54	47	7	39	46	93
1971	29	17	46	24	13	37	34	3	9	23	57
1972	22	17	39	15	11	26	22	4	13	22	44
Rate ¹											
1951	43.7	23.5	33.9	21.1	13.3	17.4	12.4	4.9	16.5	21.1	32.9
1961	37.4	27.8	32.8	19.7	18.3	19.0	16.6	2.5	13.8	16.2	32.2
1971	26.1	17.1	21.9	21.6	13.1	17.6	16.2	1.4	4.3	10.9	26.8
1972	20.8	17.8	19.4	14.2	11.5	12.9	10.9	2.0	6.5	10.9	21.7
NOVA SCOTIA											
Number											
1951	344	250	594	218	134	352	298	54	242	319	617
1961	309	229	538	187	140	327	280	47	211	300	580
1971	160	105	265	108	72	180	148	32	85	139	287
1972	122	106	228	65	64	129	100	29	99	124	224
Rate ¹											
1951	38.9	30.2	34.7	24.7	16.2	20.6	17.4	3.2	14.1	18.6	35.4
1961	31.0	24.3	27.8	18.8	14.9	16.9	14.4	2.4	10.9	15.5	29.5
1971	21.8	15.2	18.6	14.7	10.4	12.6	10.4	2.2	6.0	9.8	19.9
1972	17.8	15.9	16.8	9.5	9.6	9.5	7.4	2.1	7.3	9.2	16.4
NEW BRUNSWICK											
Number											
1951	472	363	835	241	199	440	334	106	395	293	627
1961	248	186	434	145	105	250	217	33	184	222	439
1971	130	74	204	97	48	145	135	10	59	138	273
1972	106	98	204	76	71	147	132	15	57	137	269
Rate ¹											
1951	57.6	46.0	51.9	29.4	25.2	27.4	20.8	6.6	24.5	18.2	38.3
1961	29.1	23.0	26.2	17.0	13.0	15.1	13.1	2.0	11.1	13.4	26.1
1971	20.7	12.5	16.7	15.5	8.1	11.9	11.1	0.8	4.8	11.3	22.2
1972	17.2	17.4	17.3	12.3	12.6	12.5	11.2	1.3	4.8	11.6	22.5

4.44 Infant deaths and stillbirths, by province and sex, 1951-72 (continued)

Province or territory and year	Infant deaths (<1 yr)			Neonatal deaths (<28 days)					Post- neo- natal deaths (28 days to 1 yr)	Still- births (>27 weeks gesta- tion)	Perinatal deaths (Stillbirths plus deaths < 7 days) ¹
	Male	Female	Total	Male	Female	Total	<7 days	7-27 days			
QUEBEC											
Number											
1951	3,335	2,486	5,821	1,864	1,311	3,175	2,398	777	2,646	2,768	5,166
1961	2,464	1,855	4,319	1,666	1,189	2,855	2,489	366	1,464	1,929	4,418
1971	948	692	1,640	690	500	1,190	1,059	131	450	807	1,866
1972	854	646	1,500	612	445	1,057	930	127	443	685	1,615
Rate ¹											
1951	53.7	42.3	48.1	30.0	22.3	26.3	19.8	6.4	21.8	22.9	41.8
1961	34.7	28.0	31.5	23.5	18.0	20.8	18.1	2.7	10.7	14.1	31.8
1971	20.6	16.0	18.4	15.0	11.6	13.3	11.9	1.5	5.0	9.0	20.7
1972	19.8	16.0	17.9	14.2	11.0	12.6	11.1	1.5	5.3	8.2	19.2
ONTARIO											
Number											
1951	2,010	1,535	3,545	1,389	1,040	2,429	2,033	396	1,116	1,975	4,008
1961	2,090	1,536	3,626	1,507	1,120	2,627	2,378	249	999	1,870	4,248
1971	1,146	844	1,990	821	603	1,424	1,255	169	566	1,221	2,476
1972	1,103	805	1,908	796	596	1,392	1,246	146	516	1,159	2,405
Rate ¹											
1951	33.9	27.6	30.9	23.5	18.7	21.2	17.7	3.4	9.7	17.2	34.3
1961	25.9	20.0	23.0	18.7	14.6	16.7	15.1	1.6	6.3	11.9	26.6
1971	17.1	13.3	15.3	12.2	9.5	10.9	9.6	1.3	4.3	9.4	18.8
1972	17.1	13.3	15.3	12.3	9.8	11.1	10.0	1.2	4.1	9.3	19.1
MANITOBA											
Number											
1951	369	289	658	209	169	378	301	77	280	340	641
1961	341	247	588	211	169	380	336	44	208	301	637
1971	184	132	316	117	87	204	177	27	112	164	341
1972	177	152	329	113	97	210	178	32	119	173	351
Rate ¹											
1951	35.6	30.2	33.0	20.1	17.7	19.0	15.1	3.9	14.0	17.0	31.6
1961	28.6	21.7	25.2	17.7	14.9	16.3	14.4	1.9	8.9	12.9	27.0
1971	20.0	15.0	17.5	12.7	9.9	11.3	9.8	1.5	6.2	9.1	18.7
1972	19.8	18.0	18.9	12.7	11.5	12.1	10.2	1.8	6.8	9.9	20.0
SASKATCHEWAN											
Number											
1951	353	323	676	226	175	401	338	63	275	303	641
1961	373	245	618	244	151	395	334	61	223	266	600
1971	189	136	325	132	90	222	199	23	103	159	358
1972	184	116	300	124	84	208	185	23	92	140	325
Rate ¹											
1951	31.8	30.4	31.1	20.3	16.5	18.5	15.6	2.9	12.6	13.9	29.1
1961	30.3	21.0	25.8	19.8	12.9	16.5	13.9	2.5	9.3	11.1	24.7
1971	23.2	17.2	20.2	16.2	11.4	13.8	12.4	1.4	6.4	9.9	22.1
1972	23.3	15.3	19.4	15.7	11.1	13.4	12.0	1.5	5.9	9.0	20.8
ALBERTA											
Number											
1951	531	358	889	345	212	557	462	95	332	402	864
1961	612	432	1,044	418	289	707	629	78	337	372	1,001
1971	325	223	548	226	162	388	334	54	160	254	588
1972	300	211	511	215	149	364	321	43	147	229	550
Rate ¹											
1951	38.6	27.0	32.9	25.1	16.0	20.6	17.1	3.5	12.3	14.9	31.5
1961	30.8	22.7	26.8	21.0	15.2	18.2	16.2	2.0	8.6	9.6	25.5
1971	20.5	15.2	17.9	14.3	11.0	12.7	10.9	1.8	5.2	8.3	19.1
1972	19.9	14.9	17.5	14.2	10.5	12.4	11.0	1.5	5.0	7.8	18.6
BRITISH COLUMBIA											
Number											
1951	487	352	839	299	214	513	435	78	326	365	800
1961	534	411	945	331	264	595	515	80	350	412	927
1971	381	272	653	271	188	459	417	42	194	310	727
1972	343	237	580	224	157	381	329	52	199	238	567
Rate ¹											
1951	33.8	25.8	29.9	20.7	15.7	18.3	15.5	2.8	11.6	13.0	28.1
1961	27.1	21.8	24.5	16.8	14.0	15.4	13.3	2.1	9.1	10.7	23.8
1971	21.2	16.1	18.7	15.1	11.2	13.2	12.0	1.2	5.6	8.9	20.7
1972	19.4	14.0	16.8	12.7	9.3	11.0	9.5	1.5	5.8	6.9	16.3
YUKON TERRITORY											
Number											
1951	10	9	19	4	2	6	..	..	13	2	8
1961	13	10	23	6	4	10	7	3	13	4	11
1971	8	5	13	3	3	6	4	2	7	6	10
1972	7	5	12	4	2	6	4	2	6	6	10
Rate ¹											
1951	57.8	53.3	55.6	23.1	11.8	17.5	..	..	38.1	5.8	23.3
1961	45.8	36.5	41.2	21.1	14.6	17.9	12.5	5.4	23.3	7.2	19.6
1971	29.0	21.7	25.7	10.9	13.0	11.9	7.9	4.0	13.8	11.9	19.5
1972	29.8	23.2	26.6	17.0	9.3	13.3	8.9	4.4	13.3	13.3	21.9

4.44 Infant deaths and stillbirths, by province and sex, 1951-72 (concluded)

Province or territory and year	Infant deaths (<1 yr)			Neonatal deaths (<28 days)					Post- neo- natal deaths (28 days to 1 yr)	Still- births (>27 weeks gesta- tion)	Perinatal deaths (Stillbirths plus deaths < 7 days) ¹
	Male	Female	Total	Male	Female	Total	<7 days	7-27 days			
NORTHWEST TERRITORIES											
Number											
1951	43	27	70	20	14	34	..	..	36	11	26
1961	73	51	124	25	14	39	22	17	85	16	38
1971	39	24	63	11	12	23	19	4	40	17	36
1972	39	21	60	15	8	23	18	5	37	12	30
Rate ¹											
1951	135.6	81.3	107.9	63.1	42.2	52.4	..	..	55.5	16.9	39.4
1961	128.1	93.2	111.0	43.9	25.6	34.9	19.7	15.2	76.1	14.3	33.5
1971	58.8	38.4	49.0	16.6	19.2	17.9	14.8	3.1	31.1	13.2	27.6
1972	60.8	35.2	48.4	23.4	13.4	18.6	14.5	4.0	29.9	9.7	24.0
CANADA											
Number											
1951	8,375	6,298	14,673	5,020	3,599	8,619	6,862	1,757	6,054	7,023	13,885
1961	7,447	5,493	12,940	4,966	3,598	8,564	7,523	1,041	4,376	6,019	13,542
1971	3,712	2,644	6,356	2,623	1,862	4,485	3,956	529	1,871	3,396	7,352
1972	3,405	2,533	5,938	2,356	1,761	4,117	3,626	491	1,821	3,046	6,672
Rate ¹											
1951	42.7	34.0	38.5	25.6	19.4	22.6	18.0	4.6	15.9	18.4	35.8
1961	30.5	23.7	27.2	20.3	15.6	18.0	15.8	2.2	9.2	12.7	28.1
1971	19.9	15.1	17.5	14.1	10.6	12.4	10.9	1.5	5.2	9.4	20.1
1972	19.1	15.0	17.1	13.2	10.4	11.9	10.4	1.4	5.2	8.8	19.0

¹Perinatal rates per 1,000 live- and still-born infants; all other rates per 1,000 live births.

4.45 Infant deaths, by age, 1972

Time of death	Deaths		Cumulative deaths		Time of death	Deaths		Cumulative deaths	
	No.	%	No.	%		No.	%	No.	%
1st day	2,459	41.4	2,459	41.4	1st month	4,117	69.4	4,117	69.4
2nd "	520	8.8	2,979	50.2	2nd "	430	7.2	4,547	76.6
3rd "	265	4.5	3,244	54.7	3rd "	362	6.1	4,909	82.7
4th "	137	2.3	3,381	57.0	4th "	279	4.7	5,188	87.4
5th "	101	1.7	3,482	58.7	5th "	193	3.3	5,381	90.7
6th "	82	1.4	3,564	60.1	6th "	143	2.4	5,524	93.1
7th "	62	1.0	3,626	61.1	7th "	75	1.3	5,599	94.4
1st week	3,626	61.1	3,626	61.1	8th "	93	1.6	5,692	96.0
2nd "	221	3.7	3,847	64.8	9th "	70	1.2	5,762	97.2
3rd "	123	2.1	3,970	66.9	10th "	67	1.1	5,829	98.3
4th "	147	2.5	4,117	69.4	11th "	66	1.1	5,895	99.4
					12th "	43	0.7	5,938	100.0

4.46 Canadian life table, 1971

Age	Male				Female			
	Number living at each age	Number dying between each age and the next	Prob-ability of dying before reaching next birthday	Expec-tation of life yr	Number living at each age	Number dying between each age and the next	Prob-ability of dying before reaching next birthday	Expec-tation of life yr
At birth	100,000		.02002	69.34	100,000		.01544	76.36
1 year	97,998	2,002	.00128	69.76	98,456	1,544	.00115	76.56
2 years	97,872	126	.00094	68.85	98,343	113	.00073	75.64
3 "	97,780	92	.00084	67.91	98,271	72	.00061	74.70
4 "	97,697	83	.00071	66.97	98,211	60	.00057	73.74
5 "	97,628	69	.00061	66.02	98,155	56	.00050	72.79
10 "	97,396	232	.00039	61.17	97,976	179	.00028	67.91
15 "	97,129	267	.00106	56.33	97,819	157	.00046	63.02
20 "	96,447	682	.00178	51.71	97,557	262	.00057	58.18
		872				279		

4.46 Canadian life table, 1971 (concluded)

Age	Male				Female			
	Number living at each age	Number dying between each age and the next	Probability of dying before reaching next birthday	Expectation of life <i>yr</i>	Number living at each age	Number dying between each age and the next	Probability of dying before reaching next birthday	Expectation of life <i>yr</i>
25 years	95,575		.00164	47.16	97,278		.00060	53.34
30 "	94,845	730	.00152	42.50	96,963	315	.00077	48.51
35 "	94,072	773	.00188	37.83	96,530	433	.00112	43.71
40 "	93,035	1,037	.00291	33.22	95,886	644	.00173	38.99
45 "	91,390	1,645	.00464	28.77	94,898	988	.00260	34.37
50 "	88,821	2,569	.00761	24.52	93,433	1,465	.00403	29.86
55 "	84,761	4,060	.01213	20.57	91,197	2,236	.00618	25.53
60 "	78,719	6,042	.01918	16.95	87,896	3,301	.00931	21.39
65 "	70,044	8,675	.02961	13.72	83,092	4,804	.01449	17.47
70 "	58,575	11,469	.04436	10.90	75,995	7,097	.02337	13.85
75 "	44,788	13,787	.06552	8.47	65,624	10,371	.03876	10.63
80 "	29,976	14,812	.09701	6.41	51,237	14,387	.06514	7.88
85 "	16,332	13,644	.14355	4.74	33,628	17,609	.10766	5.67
90 "	6,491	9,841	.20977	3.43	16,620	17,008	.17137	3.99
95 "	1,600	4,891	.30027	2.45	5,262	11,358	.26132	2.76
100 "	191	1,409	.41969	1.71	835	4,427	.38255	1.89

4.47 Expectation of life, 1951, 1961, 1966 and 1971 (years)

Age	1951		1961		1966		1971	
	Male	Female	Male	Female	Male	Female	Male	Female
At birth	66.33	70.83	68.35	74.17	68.75	75.18	69.34	76.36
1 year	68.33	72.33	69.50	74.98	69.53	75.71	69.76	76.56
2 years	67.56	71.55	68.63	74.11	68.64	74.81	68.85	75.64
3 "	66.68	70.66	67.71	73.18	67.71	73.88	67.91	74.70
4 "	65.79	69.74	66.78	72.23	66.77	72.93	66.97	73.74
5 "	64.86	68.80	65.83	71.27	65.82	71.97	66.02	72.79
10 "	60.15	64.02	61.02	66.41	61.00	67.12	61.17	67.91
15 "	55.39	59.19	56.20	61.51	56.16	62.22	56.33	63.02
20 "	50.76	54.41	51.51	56.65	51.50	57.37	51.71	58.18
25 "	46.20	49.67	46.91	51.80	46.94	52.52	47.16	53.34
30 "	41.60	44.94	42.24	46.98	42.29	47.68	42.50	48.51
35 "	37.00	40.24	37.56	42.18	37.62	42.88	37.83	43.71
40 "	32.45	35.63	32.96	37.45	33.01	38.15	33.22	38.99
45 "	28.05	31.14	28.49	32.82	28.55	33.51	28.77	34.37
50 "	23.88	26.80	24.25	28.33	24.31	29.02	24.52	29.86
55 "	20.02	22.61	20.30	24.01	20.38	24.70	20.57	25.53
60 "	16.49	18.64	16.73	19.90	16.81	20.58	16.95	21.39
65 "	13.31	14.97	13.53	16.07	13.63	16.71	13.72	17.47
70 "	10.41	11.62	10.67	12.58	10.83	13.14	10.90	13.85
75 "	7.89	8.73	8.21	9.48	8.37	9.94	8.47	10.63
80 "	5.84	6.38	6.14	6.90	6.36	7.26	6.41	7.88
85 "	4.27	4.57	4.46	4.89	4.79	5.16	4.74	5.67
90 "	3.10	3.24	3.16	3.39	3.60	3.60	3.43	3.99
95 "	2.24	2.27	2.20	2.32	2.71	2.48	2.45	2.76
100 "	1.60	1.59	1.49	1.56	2.04	1.69	1.71	1.89

4.48 Expectation of life at selected ages, by region or province, 1951, 1961, 1966 and 1971 (years)

Region or province and age	1951		1961		1966		1971	
	Male	Female	Male	Female	Male	Female	Male	Female
ATLANTIC PROVINCES								
At birth	66.57	70.50	68.58	73.92	..	..	..	..
1 year	69.08	72.41	70.06	75.10	..	..	..	..
20 years	51.59	54.52	52.17	56.82	..	..	..	..
40 "	33.48	35.99	33.76	37.70	..	..	..	..
65 "	13.90	15.42	14.16	16.35	..	..	..	..
NEWFOUNDLAND								
At birth	..	..	..	..	68.94	74.43	69.28	75.72
1 year	..	..	..	..	70.22	75.41	69.99	76.22
20 years	..	..	..	..	52.27	57.08	51.90	57.86
40 "	..	..	..	..	33.78	37.83	33.22	38.58
65 "	..	..	..	..	14.31	16.22	13.52	16.91
PRINCE EDWARD ISLAND								
At birth	..	..	..	..	68.32	75.51	69.30	77.35
1 year	..	..	..	..	69.43	76.22	70.10	77.64
20 years	..	..	..	..	51.56	57.88	52.04	59.36
40 "	..	..	..	..	33.49	38.77	33.83	39.96
65 "	..	..	..	..	14.43	17.57	14.40	18.41
NOVA SCOTIA								
At birth	..	..	..	..	68.34	74.80	68.66	75.97
1 year	..	..	..	..	69.16	75.43	69.05	76.13
20 years	..	..	..	..	51.32	57.16	51.02	57.77
40 "	..	..	..	..	32.99	37.96	32.80	38.50
65 "	..	..	..	..	13.80	16.75	13.58	17.14
NEW BRUNSWICK								
At birth	..	..	..	..	68.53	75.26 ^r	69.07	76.41
1 year	..	..	..	..	69.30	75.97	69.49	76.61
20 years	..	..	..	..	51.58	57.79	51.59	58.36
40 "	..	..	..	..	33.35	38.53	33.23	39.15
65 "	..	..	..	..	14.01	17.04	13.78	17.56
QUEBEC								
At birth	64.42	68.58	67.28	72.77	67.88	73.91	68.28	75.25
1 year	67.19	70.71	68.71	73.80	68.77	74.57	68.74	75.52
20 years	49.76	52.92	50.82	55.54	50.81	56.25	50.74	57.18
40 "	31.54	34.36	32.29	36.38	32.33	37.05	32.30	38.02
65 "	12.81	14.17	13.16	15.27	13.24	15.79	13.08	16.62
ONTARIO								
At birth	66.87	71.85	68.32	74.40	68.71	75.53	69.55	76.76
1 year	68.34	72.91	69.14	74.95	69.29	75.87	69.82	76.81
20 years	50.58	54.76	51.03	56.53	51.14	57.45	51.63	58.35
40 "	32.03	35.75	32.35	37.27	32.44	38.17	32.91	39.08
65 "	13.07	14.92	13.05	15.90	13.10	16.72	13.37	17.57
PRAIRIE PROVINCES								
At birth	68.36	72.28	69.79	75.66	..	..	..	..
1 year	69.90	73.43	70.96	76.40	..	..	..	..
20 years	52.24	55.53	52.90	58.08	..	..	..	..
40 "	33.86	36.63	34.37	38.83	..	..	..	..
65 "	13.88	15.51	14.22	17.00	..	..	..	..
MANITOBA								
At birth	..	..	..	..	69.80	76.11	70.16	76.93
1 year	..	..	..	..	70.54	76.57	70.60	77.21
20 years	..	..	..	..	52.48	58.25	52.67	58.88
40 "	..	..	..	..	34.11	39.10	34.18	39.66
65 "	..	..	..	..	14.18	17.42	14.32	18.02
SASKATCHEWAN								
At birth	..	..	..	..	70.45	76.45	71.05	77.59
1 year	..	..	..	..	71.49	77.06	71.76	77.98
20 years	..	..	..	..	53.50	58.80	53.82	59.62
40 "	..	..	..	..	35.22	39.61	35.59	40.51
65 "	..	..	..	..	15.00	17.59	15.44	18.54
ALBERTA								
At birth	..	..	..	..	70.10	76.24	70.42	77.30
1 year	..	..	..	..	70.82	76.72	70.90	77.52
20 years	..	..	..	..	52.70	58.30	52.94	59.17
40 "	..	..	..	..	34.36	39.09	34.60	40.06
65 "	..	..	..	..	14.46	17.34	14.64	18.24
BRITISH COLUMBIA								
At birth	66.73	72.37	68.94	75.42	69.21	75.84	69.85	76.69
1 year	67.97	73.32	69.83	76.00	69.94	76.33	70.26	76.85
20 years	50.41	55.51	51.85	57.61	51.91	58.01	52.29	58.53
40 "	32.45	36.72	33.56	38.46	33.70	38.93	34.10	39.49
65 "	13.50	15.86	13.98	16.94	14.20	17.41	14.50	18.00

4.49 Marriages and rate per 1,000 population, by province, with percentage distribution of bridegrooms and brides by birthplace, 1951, 1961, 1971 and 1972

Province or territory	Year	Total marriages	Rate per 1,000 population	Born in province where married		Born in other provinces		Born outside Canada	
				Grooms %	Brides %	Grooms %	Brides %	Grooms %	Brides %
Newfoundland	1951	2,517	7.0	85.2	96.7	2.4	1.9	12.4	1.4
	1961	3,306	7.2	88.0	97.2	3.8	1.6	8.2	1.2
	1971	4,685	9.0	91.6	95.3	4.2	3.3	4.2	1.4
	1972	5,106	9.6	91.2	95.4	5.0	2.9	3.8	1.7
Prince Edward Island	1951	583	5.9	82.3	91.1	12.9	6.0	4.8	2.9
	1961	624	6.0	81.7	89.6	15.4	7.2	2.9	3.2
	1971	961	8.6	78.9	88.1	17.4	9.5	3.7	2.4
	1972	1,013	9.0	77.8	88.5	17.3	9.2	4.9	2.3
Nova Scotia	1951	5,094	7.9	78.2	86.7	15.9	9.0	6.0	4.3
	1961	5,292	7.2	75.2	87.8	18.8	8.8	6.0	3.4
	1971	6,883	8.7	77.9	85.6	16.2	10.9	5.9	3.5
	1972	7,291	9.2	78.5	85.6	15.7	10.9	5.8	3.5
New Brunswick	1951	4,386	8.5	80.0	86.9	10.1	6.7	9.8	6.4
	1961	4,504	7.5	75.4	86.3	14.9	7.9	9.7	5.8
	1971	6,149	9.7	77.9	86.2	14.8	9.5	7.2	4.3
	1972	6,455	10.0	80.7	86.4	12.9	9.3	6.4	4.3
Quebec	1951	35,704	8.8	86.7	89.5	6.1	5.5	7.2	5.0
	1961	35,943	6.8	83.6	87.4	5.7	4.8	10.7	7.8
	1971	49,695	8.2	84.2	88.1	5.2	4.3	10.7	7.6
	1972	53,830	8.9	85.3	88.7	4.8	4.2	9.9	7.1
Ontario	1951	45,198	9.8	65.9	72.4	14.6	12.2	19.5	15.4
	1961	44,434	7.1	61.5	67.2	12.9	11.0	25.6	21.8
	1971	69,590	9.0	60.1	66.1	12.7	11.2	27.2	22.7
	1972	72,278	9.2	61.9	67.3	12.2	10.7	25.9	22.0
Manitoba	1951	7,366	9.5	67.9	75.1	15.4	13.3	16.8	11.6
	1961	6,512	7.1	66.6	74.5	18.5	14.5	14.8	11.0
	1971	9,127	9.2	67.1	75.2	17.7	13.8	15.1	11.0
	1972	9,181	9.3	68.1	75.3	17.0	13.6	14.9	11.1
Saskatchewan	1951	6,805	8.2	78.3	86.4	10.7	6.4	11.1	7.2
	1961	6,149	6.6	79.3	85.8	11.9	8.7	8.8	5.5
	1971	7,813	8.4	78.9	85.3	14.4	10.1	6.6	4.6
	1972	7,877	8.6	78.9	86.7	15.1	9.3	6.0	4.0
Alberta	1951	9,305	9.9	56.0	67.4	25.7	19.6	18.3	13.0
	1961	10,474	7.9	54.4	62.3	25.8	21.8	19.8	15.9
	1971	15,614	9.6	54.8	62.0	28.5	24.4	16.6	13.5
	1972	16,345	9.9	55.3	63.3	28.3	24.0	16.4	12.7
British Columbia	1951	11,272	9.7	35.5	41.6	43.1	43.0	21.3	15.5
	1961	10,964	6.7	36.4	45.9	35.9	32.4	27.7	21.8
	1971	20,389	9.3	43.1	50.5	32.1	29.3	24.9	20.3
	1972	20,659	9.2	43.2	50.5	32.2	29.1	24.6	20.4
Yukon Territory	1961	128	8.8	12.5	24.2	63.3	52.3	24.2	23.4
	1971	166	9.0	10.2	20.5	67.5	59.0	22.3	20.5
	1972	181	9.5	11.0	21.5	66.3	60.8	22.7	17.7
Northwest Territories	1961	145	6.3	54.5	61.4	35.9	31.7	9.7	6.9
	1971	252	7.2	41.3	55.6	43.3	33.3	15.5	11.1
	1972	254	7.1	38.2	47.3	48.0	42.9	13.8	9.8
Canada	1951 ¹	128,230	9.2	70.5	76.5	15.1	12.8	14.5	10.6
	1961	128,475	7.0	67.9	74.2	14.3	11.7	17.9	14.1
	1971	191,324	8.9	67.2	73.2	14.5	12.3	18.3	14.5
	1972	200,470	9.2	68.7	74.1	14.0	11.9	17.3	14.0

¹Excludes the Yukon Territory and Northwest Territories.

4.50 Brides and bridegrooms, by age and marital status, 1972

Age group	Brides							
	Number				Percentage			
	Spinsters	Widows	Divorced	Total	Spinsters	Widows	Divorced	Total
Under 15 years	117	—	—	117	0.1	—	—	0.1
15-19 "	57,274	15	54	57,343	32.4	0.2	0.4	28.6
20-24 "	91,814	207	2,025	94,046	51.8	2.6	13.1	46.9
25-29 "	19,175	375	3,865	23,415	10.8	4.7	25.0	11.7
30-34 "	4,440	408	2,922	7,770	2.5	5.2	19.0	3.9
35-39 "	1,774	451	2,057	4,282	1.0	5.7	13.4	2.1
40-44 "	1,025	652	1,625	3,302	0.6	8.2	10.6	1.6
45-49 "	578	999	1,351	2,928	0.3	12.6	8.8	1.5
50-54 "	437	1,144	823	2,404	0.2	14.6	5.3	1.2
55-59 "	243	1,125	413	1,781	0.1	14.2	2.7	0.9
60-64 "	151	1,093	181	1,425	0.1	13.8	1.2	0.7
65 years and over	122	1,444	85	1,651	0.1	18.2	0.5	0.8
Total, stated ages	177,150	7,913	15,401	200,464	100.0	100.0	100.0	100.0
Age not stated	5	—	1	6	...	...	...	...
Total, all ages	177,155	7,913	15,402	200,470	...	...	...	...
Average age yr	22.6	52.4	35.2	24.7	...	...	...	...
Median age ¹ "	20.7	52.7	32.0	21.3	...	...	...	...

4.50 Brides and bridegrooms, by age and marital status, 1972 (concluded)

Age group	Bridegrooms							
	Number				Percentage			
	Bachelors	Widowers	Divorced	Total	Bachelors	Widowers	Divorced	Total
Under 15 years	1	—	—	1	—	—	—	—
15-19	15,919	3	3	15,925	9.0	—	—	7.9
20-24	103,097	53	716	103,866	58.4	0.8	4.2	51.8
25-29	40,373	165	3,344	43,882	22.9	2.4	19.7	21.9
30-34	9,305	219	3,414	12,938	5.3	3.2	20.1	6.5
35-39	3,333	288	2,596	6,217	1.9	4.1	15.3	3.1
40-44	1,843	411	2,240	4,494	1.1	5.9	13.2	2.2
45-49	1,092	631	1,835	3,558	0.6	9.1	10.8	1.8
50-54	681	824	1,265	2,770	0.4	11.9	7.4	1.4
55-59	410	987	792	2,189	0.2	14.2	4.7	1.1
60-64	234	997	443	1,674	0.1	14.3	2.6	0.8
65 years and over	247	2,370	337	2,954	0.1	34.1	2.0	1.5
Total, stated ages	176,535	6,948	16,985	200,468	100.0	100.0	100.0	100.0
Age not stated	2	—	—	2	...	...	...	...
Total, all ages	176,537	6,948	16,985	200,470	...	...	...	...
Average age	yr 24.8	57.5	39.0	27.1	...	...	...	...
Median age ¹	22.5	58.5	36.0	23.1	...	...	...	...

¹The age below and above which half of the marriages occurred.

4.51 Marriages by religious denominations of brides and bridegrooms, 1972

Denomination of bridegroom	Denomination of bride										Total marriages	Percentage of groom's
	Angli-can	Bap-tist	East-ern Ortho-dox	Jewish	Lu-ther-an	Pres-by-terian	Roman Catho-lic ¹	United Church	Other sects	Not stated		
Anglican	8,558	769	130	37	673	932	5,285	4,978	1,469	34	22,865	11.4
Baptist	769	2,183	16	7	135	224	989	1,099	516	10	5,948	3.0
Eastern Orthodox	183	23	1,615	5	73	48	611	293	139	6	2,996	1.5
Jewish	75	7	8	2,065	16	13	180	41	110	6	2,592	2.8
Lutheran	693	138	70	12	1,501	182	1,347	1,184	451	14	6,024	3.0
Presbyterian	1,057	192	22	10	192	1,537	1,294	1,358	352	10	94,521	47.1
Roman Catholic ¹	4,929	931	377	108	1,152	1,137	75,040	6,435	4,272	140	32,303	16.1
United Church	4,889	971	192	22	1,083	1,196	6,252	15,906	1,746	46	26,815	13.4
Other sects	2,012	582	126	92	580	508	5,325	2,824	14,722	44	885	0.4
Not stated	80	9	2	3	29	10	194	101	52	405	100.0	61.6*
Total	23,245	5,805	2,558	2,361	5,434	5,787	96,517	34,219	23,829	715	200,470	100.0
Percentage of brides	11.6	2.9	1.3	1.2	2.7	2.9	48.1	17.1	11.8	0.4	100.0	61.6*

¹Includes Greek Catholic.

*Percentage of marriages between persons of the same religious denomination.

4.52 Divorces¹ granted to male and female petitioners, by province, 1969-72

Province or territory	1969		1970		1971		1972	
	Male	Female	Male	Female	Male	Female	Male	Female
Newfoundland	51	53	52	88	62	88	61	116
Prince Edward Island	23	50	22	43	10	51	23	42
Nova Scotia	229	388	291	486	277	444	325	602
New Brunswick	121	215	141	238	183	299	182	284
Quebec	1,388	1,561	2,278	2,594	2,250	2,951	2,504	3,917
Ontario	2,943	5,298	4,298	7,656	4,559	7,646	4,823	8,360
Manitoba	481	854	472	779	503	880	489	924
Saskatchewan	291	468	293	560	300	515	296	530
Alberta	962	2,480	1,047	2,747	974	2,682	1,057	2,710
British Columbia	1,466	2,601	1,825	3,270	1,757	3,169	1,879	3,157
Yukon Territory	15	27	16	25	23	24	18	29
Northwest Territories	10	14	6	11	9	16	13	23
Canada	7,980	14,009	10,741	18,497	10,907	18,765	11,670	20,694

¹Only those filed under the new divorce laws of July 2, 1968.

4.53 Alleged grounds for divorce¹ by type of offence, 1969-72

Alleged grounds	1969		1970		1971		1972	
	No.	%	No.	%	No.	%	No.	%
Marital offence	6,363	21.1	10,070	25.7	11,261	28.5	12,645	29.6
Adultery	3,404	11.3	4,704	11.9	5,102	12.9	5,579	13.0
Physical cruelty	3,612	12.0	5,244	13.4	5,677	14.4	6,308	14.7
Mental cruelty	136	0.5	164	0.4	176	0.4	152	0.4
Other								
Total	13,515	44.9	20,182	51.4	22,216	56.2	24,684	57.7

4.53 Alleged grounds for divorce¹ by type of offence, 1969-72 (concluded)

Alleged grounds	1969		1970		1971		1972	
	No.	%	No.	%	No.	%	No.	%
Marriage breakdown by reason of:								
Addiction to alcohol	873	2.9	896	2.3	856	2.2	859	2.0
Separation for not less than 3 years	12,539	41.6	14,938	38.1	13,874	35.1	14,803	34.6
Desertion by petitioner for not less than 5 years	2,398	8.0	2,507	6.4	1,988	5.0	1,919	4.5
Other	781	2.6	704	1.8	588	1.5	504	1.2
Total	16,591	55.1	19,045	48.6	17,306	43.8	18,085	42.3
Total, alleged grounds ^a	30,106	100.0	39,227	100.0	39,522	100.0	42,769	100.0

¹See footnote to Table 4.52.^aTotals are higher than the numbers of divorces because some divorce decrees involve more than one alleged ground.**4.54 Divorces¹ by number of dependent children, 1969-72**

Number of children	1969		1970		1971		1972	
	No.	%	No.	%	No.	%	No.	%
0	12,072	54.9	13,714	46.9	13,241	44.6	14,305	44.2
1	4,108	18.7	6,013	20.6	6,189	20.9	7,078	21.9
2	3,129	14.2	5,025	17.2	5,430	18.3	5,956	18.4
3	1,587	7.2	2,624	9.0	2,825	9.5	2,963	9.2
4	660	3.0	1,180	4.0	1,250	4.2	1,294	3.9
5 and more	433	2.0	682	2.3	737	2.5	768	2.4
Total, divorces	21,989	100.0	29,238	100.0	29,672	100.0	32,364	100.0
Average number of children	0.92	...	1.11	...	1.17	...	1.15	...

¹See footnote to Table 4.52.**4.55 Divorces¹ by duration of marriage, 1969-72**

Duration of marriage	1969		1970		1971		1972	
	No.	%	No.	%	No.	%	No.	%
Less than 1 year	51	0.2	58	0.2	75	0.3	84	0.3
1 year	281	1.3	390	1.3	472	1.6	524	1.6
2 years	505	2.3	834	2.9	931	3.1	1,022	3.2
3 "	636	2.9	1,094	3.7	1,258	4.2	1,465	4.5
4 "	867	3.9	1,406	4.8	1,638	5.5	1,948	6.0
Total, 1-4 years	2,289	10.4	3,724	12.7	4,299	14.4	4,959	15.3
5 years	909	4.1	1,388	4.7	1,687	5.7	2,020	6.2
6 "	919	4.2	1,430	4.9	1,586	5.3	1,924	5.9
7 "	916	4.2	1,479	5.1	1,468	4.9	1,717	5.3
8 "	945	4.3	1,350	4.6	1,471	5.0	1,523	4.7
9 "	918	4.2	1,251	4.3	1,270	4.3	1,465	4.5
Total, 5-9 years	4,607	21.0	6,898	23.6	7,482	25.2	8,649	26.7
10-14 years	4,091	18.6	5,655	19.3	5,631	18.9	5,905	18.2
15-19 "	3,294	14.9	4,401	15.1	4,290	14.5	4,442	13.7
20-24 "	3,051	13.9	3,615	12.4	3,438	11.6	3,518	10.9
25-29 "	2,299	10.5	2,510	8.6	2,307	7.8	2,445	7.6
30 years and over	2,267	10.3	2,319	7.9	2,123	7.2	2,323	7.2
Not stated	40	0.2	58	0.2	27	0.1	39	0.1
Total, divorces	21,989	100.0	29,238	100.0	29,672	100.0	32,364	100.0
Median duration of marriage	14.9	...	13.5	...	12.6	...	12.1	...

¹See footnote to Table 4.52.**4.56 Divorces¹ by marital status of husband and wife at time of marriage, 1969-72**

Marital status	1969		1970		1971		1972	
	No.	%	No.	%	No.	%	No.	%
Husband								
Single	20,301	92.3	27,150	92.9	27,525	92.8	30,151	93.2
Widowed	464	2.1	525	1.8	482	1.6	470	1.4
Divorced	1,221	5.6	1,560	5.3	1,662	5.6	1,739	5.4
Not stated	3	--	3	--	3	--	4	--
Total	21,989	100.0	29,238	100.0	29,672	100.0	32,364	100.0
Wife								
Single	20,051	91.2	26,799	91.7	27,236	91.8	29,914	92.4
Widowed	665	3.0	708	2.4	712	2.4	727	2.3
Divorced	1,273	5.8	1,730	5.9	1,723	5.8	1,722	5.3
Not stated	—	—	1	--	1	--	1	--

¹See footnote to Table 4.52.

4.57 Immigrant arrivals, 1946-72

Year	Arrivals	Year	Arrivals	Year	Arrivals
1946	71,719	1955	109,946	1964	112,606
1947	64,127	1956	164,857	1965	146,758
1948	125,414	1957	282,164	1966	194,743
1949	95,217	1958	124,851	1967	222,876
1950	73,912	1959	106,928	1968	183,974
1951	194,391	1960	104,111	1969	161,531
1952	164,498	1961	71,689	1970	147,713
1953	168,868	1962	74,586	1971	121,900
1954	154,227	1963	93,151	1972	122,006

4.58 Immigrant arrivals, by country of last permanent residence, 1971 and 1972

Country of last permanent residence	1971	1972	Country of last permanent residence	1971	1972
Europe	52,031	51,293	Asia (concluded)		
Austria	407	365	India	5,313	5,049
Belgium	505	447	Indonesia	108	107
British Isles			Iran	205	174
England	11,677	12,520	Iraq	133	99
Northern Ireland	976	2,048	Israel	600	620
Scotland	2,522	3,270	Japan	883	718
Wales	240	323	Jordan	213	147
Lesser Isles	36	36	Korea, South	1,119	1,280
Czechoslovakia	283	154	Lebanon	928	996
Denmark	343	326	Malaysia	399	368
Finland	398	275	Pakistan	968	1,190
France	2,966	2,742	Philippines	4,180	3,946
Germany, Federal Republic of	2,275	2,025	Singapore	137	166
Greece	4,769	4,016	Sri Lanka	218	240
Hungary	373	322	Syria	136	170
Ireland, Republic of	830	936	Taiwan	761	859
Italy	5,790	4,608	Vietnam, South	137	154
Malta	223	414	Other Asia	431	401
The Netherlands	1,301	1,471	North and Central America	36,019	31,836
Norway	127	134	Antigua	137	121
Poland	1,132	1,321	Bahamas	108	102
Portugal	9,157	8,737	Barbados	677	534
Spain	613	523	Bermuda	174	120
Sweden	423	489	Grenada	187	153
Switzerland	1,024	778	Haiti	989	936
Turkey	288	506	Jamaica	3,903	3,092
USSR	155	315	Mexico	382	624
Yugoslavia	2,997	2,047	St. Kitts, Nevis	100	97
Other Europe	201	145	St. Vincent	234	178
Africa	2,973	8,435	Trinidad and Tobago	4,149	2,739
Egypt	730	606	United States	24,366	22,618
Ghana	92	92	Other North and Central America	613	522
Kenya	289	320	South America	5,058	4,309
Mauritius	132	127	Argentina	269	381
Morocco	101	236	Brazil	424	351
Nigeria	113	134	Chile	365	294
South Africa, Republic of	728	440	Colombia	269	210
Tanzania	180	1,105	Ecuador	192	171
Uganda	149	5,021	Guyana	2,384	1,976
Zambia	112	78	Paraguay	176	198
Other Africa	347	276	Peru	393	251
Australasia	2,906	2,148	Uruguay	340	243
Australia	2,300	1,694	Venezuela	177	164
New Zealand	602	449	Other South America	69	70
Other Australasia	4	5	Oceania	742	660
Asia	22,171	23,325	Fiji	721	636
Bangladesh	—	103	Other Oceania	21	24
China	47	25	Total, all countries	121,900	122,006
Cyprus	246	216			
Hong Kong	5,009	6,297			

4.59 Immigrant arrivals, by country of citizenship, 1971 and 1972

Country of citizenship	1971	1972	Country of citizenship	1971	1972
Australia	1,834	1,387	Germany, Federal Republic of	1,789	1,552
Austria	306	251	Greece	4,857	4,054
Belgium	327	296	Haiti	1,113	1,056
Britain and colonies	20,290	24,217	Hungary	430	373
Central America	126	967	India	5,697	5,754
China	2,877	2,789	Ireland, Republic of	916	1,123
Czechoslovakia	386	246	Israel	559	581
Denmark	334	299	Italy	5,956	4,809
Egypt	783	691	Jamaica	4,048	3,204
Finland	434	295	Japan	815	684
France	2,210	2,023	Lebanon	819	899

4.59 Immigrant arrivals, by country of citizenship, 1971 and 1972 (concluded)

Country of citizenship	1971	1972	Country of citizenship	1971	1972
Mexico	337	601	Switzerland	818	610
Morocco	139	272	Trinidad and Tobago	4,096	2,756
The Netherlands	1,302	1,374	Turkey	309	523
New Zealand	636	464	Union of Soviet Socialist Republics	159	319
Norway	139	122	United States	23,227	21,497
Pakistan	1,122	1,347	Yugoslavia	3,440	2,531
Philippines	4,118	4,050	Other African	699	3,987
Poland	1,264	1,403	Other Asian	4,156	4,535
Portugal	9,862	9,402	Other European	397	589
South Africa	710	439	Stateless	1,364	2,480
South America	4,525	3,994	Other	1,006	14
Spain	628	493			
Sri Lanka	230	293			
Sweden	311	361	Total	126,007	122,006

4.60 Intended province of destination of male and female immigrants, 1971 and 1972

Province or territory	1971			1972		
	Male	Female	Total	Male	Female	Total
Newfoundland	432	387	819	342	344	686
Prince Edward Island	81	91	172	84	91	175
Nova Scotia	891	921	1,812	930	942	1,872
New Brunswick	518	520	1,038	636	665	1,301
Quebec	9,723	9,499	19,222	9,343	9,249	18,592
Ontario	31,530	32,827	64,357	31,171	32,634	63,805
Manitoba	2,550	2,751	5,301	2,350	2,912	5,262
Saskatchewan	697	729	1,426	747	764	1,511
Alberta	4,311	4,342	8,653	4,266	4,124	8,390
British Columbia	9,615	9,302	18,917	10,048	10,059	20,107
Yukon Territory and Northwest Territories	97	86	183	153	152	305
Canada	60,445	61,455	121,900	60,070	61,936	122,006

4.61 Sex distribution of immigrants, 1970-72

Year	Male			Female			Total
	<18 years	Adults	Total	<18 years	Adults	Total	
1970	18,322	55,935	74,257	17,482	55,974	73,456	147,713
1971	15,794	44,650	60,444	14,951	46,505	61,456	121,900
1972	15,358	44,712	60,070	14,945	46,991	61,936	122,006

4.62 Marital status of immigrant arrivals, by sex and age group, 1972

Sex and age group	Single	Married	Widowed	Divorced	Separated	Total
Male						
0- 4 years	5,408	—	—	—	—	5,408
5- 9 "	5,072	—	—	—	—	5,072
10-14 "	3,576	—	—	—	—	3,576
15-19 "	4,133	68	—	—	—	4,201
20-24 "	8,011	2,613	1	20	10	10,655
25-29 "	6,109	6,231	6	120	61	12,527
30-34 "	1,598	4,999	10	151	77	6,835
35-39 "	468	3,477	6	112	39	4,102
40-44 "	158	2,006	9	61	28	2,262
45-49 "	87	1,201	9	57	14	1,368
50-54 "	47	799	21	34	10	911
55-59 "	30	639	38	22	12	741
60-64 "	21	811	77	16	8	933
65-69 "	17	605	109	6	8	745
70 years and over	21	456	240	9	8	734
Total, male	34,756	23,905	526	608	275	60,070
Female						
0- 4 years	5,158	—	—	—	—	5,158
5- 9 "	4,887	—	—	—	—	4,887
10-14 "	3,510	8	—	—	—	3,518
15-19 "	4,124	1,359	1	1	1	5,486
20-24 "	6,683	6,593	6	58	37	13,377
25-29 "	3,563	6,890	8	157	66	10,684
30-34 "	1,115	4,188	39	143	47	5,532
35-39 "	436	2,494	57	101	39	3,127
40-44 "	211	1,496	76	83	35	1,901
45-49 "	113	1,035	192	92	31	1,463
50-54 "	90	880	331	63	52	1,416
55-59 "	54	740	470	51	38	1,353
60-64 "	85	663	633	56	47	1,484
65-69 "	58	408	600	31	38	1,135
70 years and over	88	259	1,022	16	30	1,415
Total, female	30,175	27,013	3,435	852	461	61,936

4.63 Intended occupations of immigrants, 1971 and 1972

Intended occupation	1971	1972	Intended occupation	1971	1972
WORKERS			WORKERS (concluded)		
Managerial (owners, managers, officials)	3,464	4,368	Road transport	421	470
Professional and technical	16,307	15,262	Other	9	11
Professional engineers			Communication trades	141	141
Civil	289	289	Commercial sales	2,107	2,076
Mechanical	347	435	Auctioneers, canvassers	12	4
Industrial	347	440	Pedlars, commercial travellers	435	402
Electrical	371	364	Sales clerks, salesmen	1,654	1,665
Mining	103	81	Other	6	5
Chemical	139	147	Financial sales	379	384
Other	91	99	Service and recreation	6,387	6,575
Physical scientists			Protective service	107	110
Chemists	272	295	Cooks	1,068	1,075
Geologists	225	178	Domestic servants	2,663	2,723
Physicists	118	88	Nurses' aides	502	467
Other	20	18	Waiters, porters	831	928
Biologists and agricultural professionals			Athletes, entertainers	218	228
Biological scientists	251	244	Other	998	1,044
Veterinarians	53	42	Farmers and farm workers	2,160	2,127
Other	155	130	Loggers and related workers	65	77
Teachers			Fishermen, hunters, trappers	22	16
Professors, principals	1,358	1,031	Miners, well drillers	237	144
School teachers	2,275	1,797	Construction trades	4,005	3,831
Other instructors	204	203	Carpenters	1,018	985
Health professionals			Plumbers	337	264
Physicians, surgeons	987	988	Electricians	767	691
Dentists	55	87	Painters, glaziers	341	334
Nurses, graduate	989	892	Bricklayers, stonemasons	675	512
Therapists	165	159	Cement and concrete workers	86	91
Pharmacists	71	73	Plasterers, lathers	57	76
Medical and dental technicians	749	674	Sheet metal workers	131	123
Other	313	308	Other (excl. labourers)	593	755
Law professionals	47	42	Manufacturing and mechanical trades	12,161	11,558
Religion professionals	356	348	Food workers	474	426
Artists, writers and musicians			Rubber workers	18	17
Commercial artists	140	101	Leather workers	136	108
Art teachers	118	81	Textile workers	183	157
Authors, editors, journalists	264	244	Tailors, furriers	3,072	3,274
Musicians, music teachers	324	364	Woodworkers, sawyers	498	447
Other professionals			Paper and chemical workers	36	27
Architects	111	112	Printers, bookbinders	282	257
Draftsmen	730	733	Furnacemen, moulders	132	141
Surveyors	120	82	Jewellers, watchmakers	144	168
Actuaries, statisticians	342	338	Machinists	2,711	2,370
Economists	250	262	Mechanics, repairmen	3,033	2,732
Computer programmers	23	17	Electrical, electronic workers	591	487
Accountants, auditors	382	475	Painters (excl. construction)	102	128
Dietitians	46	54	Clay, glass, stone workers	76	71
Social workers	381	354	Stationary enginemen	172	203
Librarians	139	104	Freight handlers	26	32
Interior decorators	81	97	Other	475	513
Photographers	132	135	Labourers	1,324	1,184
Science technicians	1,502	1,447	Not stated and unknown	2,015	2,486
Other	872	810	Total, workers	61,282	59,432
Clerical	9,909	8,549	NON-WORKERS		
Bookkeepers, cashiers	1,323	1,384	Wives	21,333	21,749
Storekeepers, shipping clerks	304	375	Children	29,684	30,977
Stenographers, typists	4,073	2,791	Other	9,601	9,848
Other	4,209	3,999	Total, non-workers	60,618	62,574
Transportation trades	599	654	Total, immigrants	121,900	122,006
Aircraft operators	50	70			
Railway operators	10	10			
Water transport	109	93			

4.64 Canadian-born persons entering the United States from Canada and elsewhere, and total persons entering the United States from Canada, years ended June 30, 1962-72¹

Year	Entering US from Canada		Canadian-born entering US from elsewhere	Year	Entering US from Canada		Canadian-born entering US from elsewhere
	Canadian-born	Total			Canadian-born	Total	
1962	29,569	44,272	808	1968	27,189	41,716	473
1963	35,320	50,509	683	1969	18,196	29,303	386
1964	37,351	51,114	723	1970	13,466	26,850	338
1965	37,519	50,035	808	1971	12,847	22,709	281
1966	27,707	37,273	651	1972	10,543	18,596	233
1967	22,729	34,768	713				

¹Includes only persons who have declared their intention of remaining permanently in the US when applying for a visa.

4.65 Internal migration of Canadian-born population, by province of birth and by province of residence, 1971 (thousands)

Province or territory of birth	Province or territory of residence, 1971											Total (place of birth)
	Nfld.	PEI	NS	NB	Que.	Ont.	Man.	Sask.	Alta.	BC	YT and NWT	
Newfoundland	496	1	17	4	7	60	2	1	2	5	--	594
Prince Edward Island	--	95	7	5	3	20	1	1	3	3	--	139
Nova Scotia	4	4	661	26	21	116	5	3	12	21	--	874
New Brunswick	2	3	20	539	49	81	3	2	7	12	--	718
Quebec	3	1	10	16	5,303	252	9	6	18	31	1	5,650
Ontario	5	3	24	15	137	5,210	40	27	60	107	2	5,630
Manitoba	--	--	3	2	14	91	702	36	53	107	2	1,011
Saskatchewan	--	--	3	1	8	81	53	710	145	178	3	1,183
Alberta	--	--	3	2	7	43	13	20	1,003	162	6	1,260
British Columbia	--	--	3	1	7	39	8	9	41	1,056	5	1,170
Yukon Territory and Northwest Territories	--	--	--	--	2	4	1	1	3	4	28	43
Total (place of residence)	513	108	752	611	5,559	5,996	837	815	1,346	1,688	48	18,273

4.66 Population 5 years and over, by migration status for the period 1966-71, by province, 1971

Migration status (based on residence as at June 1, 1966)	Province of residence as at June 1, 1971													
	Nfld.		PEI		NS		NB		Que.		Ont.			
	'000	%	'000	%	'000	%	'000	%	'000	%	'000	%	'000	%
Non-migrants	380	82.7	81	80.7	575	80.6	468	81.5	4,417	79.7	5,291	75.0		
Non-movers ¹	303	65.9	67	66.5	435	61.0	355	61.9	3,063	55.3	3,579	50.7		
Movers within same municipality	77	16.8	14	14.2	140	19.6	113	19.6	1,354	24.4	1,712	24.3		
Migrants ²	79	17.3	20	19.3	138	19.4	106	18.5	1,125	20.3	1,765	25.0		
Within same province	56	12.1	8	8.2	69	9.7	53	9.2	836	15.1	995	14.1		
From different province	13	3.0	9	8.4	46	6.5	37	6.4	78	1.4	241	3.4		
From outside Canada	4	0.9	2	1.5	13	1.8	9	1.6	138	2.5	439	6.2		
Province of residence in 1966 not stated	6	1.3	1	1.3	10	1.4	7	1.3	73	1.3	90	1.3		
Total ³	459	100.0	101	100.0	713	100.0	574	100.0	5,542	100.0	7,055	100.0		
	Man.		Sask.		Alta.		BC		YT and NWT		Canada			
	'000	%	'000	%	'000	%	'000	%	'000	%	'000	%		
Non-migrants	702	78.0	670	79.1	1,073	72.8	1,313	65.5	27	58.8	14,996	76.1		
Non-movers ¹	488	54.2	499	58.9	715	48.5	857	42.7	11	24.2	10,371	52.6		
Movers within same municipality	214	23.8	171	20.2	358	24.3	456	22.8	16	34.6	4,625	23.5		
Migrants ²	198	22.0	177	20.9	401	27.2	693	34.5	19	41.2	4,721	23.9		
Within same province	98	10.9	119	14.0	190	12.9	340	16.9	2	5.0	2,766	14.0		
From different province	57	6.3	36	4.3	128	8.6	194	9.7	12	26.8	852	4.3		
From outside Canada	32	3.5	12	1.4	60	4.1	115	5.7	2	4.0	824	4.2		
Province of residence in 1966 not stated	12	1.3	10	1.2	23	1.6	44	2.2	3	5.4	279	1.4		
Total ³	900	100.0	846	100.0	1,474	100.0	2,006	100.0	46	100.0	19,717	100.0		

¹Persons living in same dwelling as at June 1, 1966 and June 1, 1971.
²Persons whose residence as at June 1, 1971 was in a different municipality than as at June 1, 1966.
³Excludes persons in the Armed Forces or in other government service, stationed outside Canada.

4.67 Migrant¹ population 5 years and over, by type and locality of residence in 1966 and 1971

Locality of residence in 1966	Locality of residence in 1971				Total migrants (by residence in 1966)
	Census metro- politan areas ^a	Other urban local- ities	Rural localities ^a		
			Predom- inantly non-farm	Predom- inantly farm	
	<i>Number (thousands)</i>				
Census metropolitan areas ^a	1,220	297	202	64	1,783
Other urban localities	417	347	197	61	1,023
Rural localities ^a					
Predominantly non-farm	196	201	125	38	560
Predominantly farm	71	82	35	28	217
Outside of Canada	666	99	47	12	824
Residence in 1966 not stated	168	81	51	15	315
Total migrants (by residence in 1971)	2,738	1,107	657	218	4,720

4.67 Migrant¹ population 5 years and over, by type and locality of residence in 1966 and 1971 (concluded)

Locality of residence in 1966	Locality of residence in 1971				Total migrants (by residence in 1966)
	Census metro- politan areas ^a	Other urban local- ities	Rural localities ^a		
			Predom- inantly non-farm	Predom- inantly farm	
<i>Percentage distribution (residence in 1966)</i>					
Census metropolitan areas ^a	44.6	26.8	30.7	29.3	37.8
Other urban localities	15.2	31.4	30.0	28.1	21.7
Rural localities ^a					
Predominantly non-farm	7.1	18.1	19.1	17.3	11.9
Predominantly farm	2.6	7.6	5.3	12.9	4.6
Outside of Canada	24.3	8.9	7.1	5.4	17.4
Residence in 1966 not stated	6.1	7.3	7.8	6.9	6.7
Total migrants (by residence in 1971)	100.0	100.0	100.0	100.0	100.0
<i>Percentage distribution (residence in 1971)</i>					
Census metropolitan areas ^a	68.4	16.6	11.3	3.6	100.0
Other urban localities	40.8	34.0	19.3	6.0	100.0
Rural localities ^a					
Predominantly non-farm	35.0	35.9	22.4	6.8	100.0
Predominantly farm	32.8	38.1	16.1	13.0	100.0
Outside of Canada	80.9	12.0	5.7	1.4	100.0
Residence in 1966 not stated	53.3	25.6	16.3	4.8	100.0
Total migrants (by residence in 1971)	58.0	23.5	13.9	4.6	100.0

¹See footnote 2, Table 4.66.²As defined for the 1971 Census (see text in Section 4.2.1).³Rural figures exclude a very small part of the rural population living within the fringe boundaries of census metropolitan areas. Predominantly farm localities are those municipalities in which the majority of the population live on farms (as defined in the 1971 Census of Agriculture). The converse is true of predominantly non-farm localities.**Sources**

4.1, 4.2, 4.4, 4.5, 4.7, 4.8, 4.10 - 4.13, 4.15 - 4.21, 4.23 - 4.30, 4.65 - 4.67 Census Characteristics Division, Census Field, Statistics Canada.

4.3, 4.6, 4.9, 4.14, 4.64 Population Estimates and Projections Division, Census Field, Statistics Canada.

4.22 Communications Division, Program Co-ordination and Administration Branch, Department of Indian Affairs and Northern Development.

4.31 - 4.56 Health and Welfare Division, Household and Institutional Statistics Field, Statistics Canada.

4.57 - 4.63 Canada Immigration Division, Department of Manpower and Immigration.

Chapter 5

Health

5.1 Federal health services

Under the British North America Act, responsibility for administration of health services is the direct concern of provincial governments, with municipalities often exercising considerable influence over matters delegated to them by provincial legislatures. Although patterns of health services in different provinces are similar, their organization, system of financing, and administration vary from province to province.

On the national level, the Department of National Health and Welfare is the chief federal agency in health matters. In conjunction with other federal agencies and with provincial and local health agencies it works to raise the health level of all Canadians. The health side of the Department, under the Deputy Minister of National Health, is organized into five branches: Health Protection, Medical Services, Health Programs, Long Range Health Planning, and Fitness and Amateur Sport. In addition, there is the Medical Research Council, which reports to Parliament through the Minister of National Health and Welfare.

The Health Protection Branch provides services to protect the Canadian public from health hazards of all types. It is composed of eight organizational units: Foods, Drugs, Environmental Health, Non-Medical Use of Drugs, Laboratory Centre for Disease Control, Field Operations, Planning and Evaluation, and Administration.

The Health Programs Branch administers federal aspects of Canada's two major health programs, hospital and medical insurance; supports health care delivery systems and resource development; undertakes health promotion; and both supports and conducts research. This Branch is made up of the following units: Program Development and Evaluation, Health Insurance, Research Programs, Health Manpower, Health Facilities Design, Health Systems, Health Standards and Consulting, Community Health, and Health Economics and Management Services.

The Medical Services Branch has direct responsibility for the health care and public health services of Indians and Eskimos and of all residents of the Yukon and Northwest Territories, as well as for quarantine and immigration medical services, public service health, a national prosthetics service, and civil aviation medicine.

The purpose of the Fitness and Amateur Sport Branch is to encourage, promote, and develop fitness and amateur sport by enhancing the competitive excellence of Canada's athletes and by encouraging participation in activities oriented to fitness and recreation.

The Long Range Health Planning Branch is concerned with identifying new health issues and trends.

Other federal agencies carry out specialized health functions; for example, Statistics Canada is responsible for gathering vital and other health statistics, the Department of Veterans Affairs administers hospitals and health services for war veterans, and the Canada Department of Agriculture has certain responsibilities connected with health aspects of food production.

5.1.1 Health care

Public medical care. The Medical Care Act was passed by Parliament in December 1966 and the medical care program began to operate on July 1, 1968. As at April 1, 1972 all provinces and territories had entered the federal program. Under the Act the federal government contributes to any one participating province half of the per capita cost of all insured services furnished under the plans of all participating provinces, multiplied by the number of insured persons in that one province. The minimum criteria to be met are described in the following paragraphs.

Comprehensive coverage must be provided for all medically required services rendered by a physician or surgeon. There can be no dollar limit or exclusion except on the ground that the service was not medically required. The federal program includes not only those services that have been traditionally covered as benefits to a greater or lesser extent by the health insurance industry, but also those preventive and curative services that have been traditionally covered through the public sector in each province, such as medical care of patients in mental

and tuberculosis hospitals and services of a preventive nature provided to individuals by physicians in public health agencies.

The plan must be universally available to all eligible residents on equal terms and conditions and cover at least 95% of the total eligible provincial population. This "uniform terms and conditions" clause is intended to ensure that all residents have access to coverage and to prevent discrimination in premiums on account of previous health, age, non-membership in a group, or other considerations. If a premium system of financing is selected, subsidization in whole or in part for low-income groups is permitted. It has been left to the individual province to determine whether its residents should be insured on a voluntary or compulsory basis. Utilization charges at the time of service are not precluded by the federal legislation if they do not impede, either by their amount or by the manner of their application, reasonable access to necessary medical care, particularly for low-income groups. The plan must provide portability of benefit coverage when the insured resident who has paid his premiums, if any, is temporarily absent from the province and when moving residence to another participating province. The provincial medical care insurance plan must be administered on a non-profit basis by a public authority that is accountable to the provincial government for its financial transactions. It is permissible for provinces to assign certain administrative functions to private agencies.

These criteria leave substantial flexibility with each province to determine its own administrative arrangements for the operation of its medical care insurance plan and to choose the way in which it will be financed, i.e. through premiums, sales tax, other provincial revenues, or by a combination of methods. Federal contributions to the provinces under this program totalled \$631 million in the fiscal year 1972-73.

Provincial programs providing health care services (apart from those already insured under the Medical Care Act) for welfare recipients establishing eligibility on the basis of financial need are supported financially by the federal program known as the Canada Assistance Plan. This program provides for federal payment of half the cost of personal health care services, as well as welfare services. The provinces are free to make available a wide range of health care benefits.

Hospital insurance. Provincial hospital insurance programs, operating in all provinces and territories since 1961, cover 99% of the population of Canada. Under the Hospital Insurance and Diagnostic Services Act of 1957, the federal government shares with the provinces the cost of providing specified hospital services to patients insured by these programs. Specifically excluded are tuberculosis hospitals and sanatoria, hospitals or institutions for the mentally ill, and institutions providing custodial care, such as nursing homes and homes for the aged. The methods of administering and financing the program in each province and the provision of services above the stipulated minimum required by the Act are left to the province.

Insured in-patient services must include accommodation, meals, necessary nursing service, diagnostic procedures, pharmaceuticals, the use of operating rooms, case rooms, anaesthesia facilities, and the use of radiotherapy and physiotherapy if available. Similar out-patient services may be included in provincial plans and authorized for contribution under the Act. All provinces include some out-patient services, and most cover a fairly comprehensive range. The Government of Canada contributes to each province out of the Consolidated Revenue Fund the sum of 25% of the per capita cost of in-patient services in Canada and 25% of the per capita cost of in-patient services in the province, multiplied by the average number of insured persons in that province. Thus, the total contribution is about 50% of the sharable cost for all Canada, but the proportion of federal support is higher in provinces where the per capita cost is below the national average and lower in the other provinces. Contributions for insured out-patient services in each province are paid in the same proportion as the contributions to the cost for in-patients.

Under the Established Programs (Interim Arrangements) Act, a province may contract out of various federal-provincial programs, including hospital insurance, and on January 1, 1965, Quebec did so. Accordingly, the federal contribution to the Quebec hospital insurance program is made through tax abatement and not under the Hospital Insurance Act. Federal payments to the provinces (including Quebec) under this program for the fiscal year 1972-73 amounted to \$1,355 million.

Health manpower development. The purpose of the health manpower development program of the Department of National Health and Welfare is to improve and maintain, through the collaboration of federal and provincial governments and other concerned agencies, the quality, supply, distribution, and productivity of all health manpower in Canada at a level that makes possible the delivery of effective and efficient total health services. The program includes the administration of the Health Resources Fund Act of 1966 which provides a Fund of \$500 million over a 15-year period (1966-80) to provide financial assistance in the planning, acquisition, construction, renovation and equipping of health training facilities.

Health services for specific groups. Through its Medical Services Branch, the Department of National Health and Welfare provides or arranges for several types of medical and health service for persons whose care is by custom or legislation a federal responsibility.

Indians, as residents of a province or territory, are entitled to the benefits of medical care and hospital insurance. These insured benefits are supplemented by Medical Services, which assists Indian bands in arranging for transportation and in obtaining drugs and prostheses. Emphasis is placed on a comprehensive public health program which provides dental care for children, immunization, school health services, health education, and prenatal, postnatal and well-baby clinics. Through direct financial assistance to organizations of native peoples, support is given to Indian programs directed toward improving the quality of life by means of adult education, family planning, accident prevention, venereal disease control programs, and the suppression of alcoholism and drug abuse. Since Indians comprise only 1% of the Canadian population and are distributed widely throughout Canada, a network of specially designed health facilities has been constructed in almost 200 communities that would otherwise lack health facilities. Approximately 60 of these are nursing stations, 91 are health centres, 46 are out-patient clinics, and nine are hospitals.

Increasing numbers of Indians are being trained and employed in the public health and medical care programs to facilitate understanding and health activities in local communities.

With the exception of insured hospital and medical care programs, which are administered by the Yukon and Northwest Territories governments, the Department of National Health and Welfare directs health services for all residents of the two northern territories. The services comprise all normal health department activities including a comprehensive public health program, special arrangements to facilitate inter-station communication, and the transportation of patients from isolated communities to referral medical centres. Several university groups have interests in delineated zones for the provision on a rotation basis of medical personnel and students. Their activities are supported financially through government contracts and medical care insurance. Departmental facilities include four hospitals, two nursing stations, five health stations, and three health centres in the Yukon Territory and four hospitals, 38 nursing stations, seven health stations and seven health centres in the Northwest Territories.

Under the Quarantine Act, all vessels, aircraft, and other conveyances and their crews and passengers arriving in Canada from foreign countries are subject to inspection by quarantine officers to detect and correct conditions that could lead to the entry into Canada of such diseases as smallpox, cholera, plague, and yellow fever. Fully organized quarantine stations are located at all major seaports and airports. The Branch is responsible for enforcing standards of hygiene on federal property including ports and terminals, interprovincial means of transport, and Canadian ships and aircraft.

Under the Department of National Health and Welfare Act and the Immigration Act, the Medical Services Branch determines in Canada and other countries the health status of all persons referred to them by the Department of Manpower and Immigration for Canadian immigration purposes and, additionally, provides or arranges health care services for certain classes of persons after arrival in Canada, including immigrants who become ill en route to their destination or while seeking employment.

The Medical Services Branch is responsible for a comprehensive occupational health program for federal employees throughout the country and abroad. This service includes health counselling, surveillance of the occupational and working environment, pre-employment, periodic and special examinations, first aid and emergency treatment, and a wide range of advisory services and special health programs.

The Department provides an advisory service to the Ministry of Transport concerning the

health and safety of all those involved in Canadian civil aviation. Regional and headquarters aviation medical officers review all medical examinations, participate in aviation safety programs, and assist in air accident investigations. Close liaison with authorities responsible for foreign aviation medicine is maintained as standards are usually based upon international agreements.

The objectives of Prosthetic Services are to make available high quality services in prosthetic and orthotic rehabilitation under the terms of agreements in effect with the provinces and with the Department of Veterans Affairs, and to provide a national focal point for expertise in this field.

A number of Medical Services physicians provide an assessment and advisory service to the Unemployment Insurance Commission in relation to claims for benefits under the Sickness and Maternity Benefit Plan. The Canada Pension Plan maintains its own disability assessment service.

Emergency Health Services prepares plans to ensure that the health component of the Department is able to continue operating in the event or threat of nuclear attack and to advise, assist and stimulate provincial and municipal health departments in emergency health planning for both peacetime and wartime emergencies.

5.1.2 Health protection

Through the Health Protection Branch, the Department is responsible for developing an integrated program to protect the public against unsafe foods, drugs, cosmetics, medical and radiation-emitting devices, against harmful microbial agents and technological and social environments deleterious to health, against environmental pollutants and contaminants of all kinds, and against fraudulent drugs and devices.

The Branch is composed of six operational directorates — Foods, Drugs, Environmental Health, Laboratory Centre for Disease Control, Non-Medical Use of Drugs, and Field Operations. It is responsible for enforcing the Food and Drugs Act and Regulations, the Narcotic Control Act and Regulations, the Proprietary or Patent Medicine Act, and the Radiation Emitting Devices Act and Regulations.

Food. Standards of safety and purity are developed through laboratory research and maintained by means of a regular and widespread inspection program. The inspection of food-manufacturing establishments plays a major role in the production of clean, wholesome foods containing ingredients that meet recognized standards. Changing food technology requires the development of methods of laboratory analysis to ensure the safety of new types of ingredients and packaging materials. The Food and Drug Regulations list chemical additives that may be used in foods, the amounts that may be added to each food, and the underlying reason. Information on new additives must be submitted for careful review before they are included in the permitted list. Considerable emphasis is placed on studies to ensure that the levels of pesticide residues in foods do not constitute a health hazard. The effect of new packaging and processing techniques on the bacteria associated with food spoilage is also of special concern.

Human nutrition. The field work for Nutrition Canada, the first survey of the nutritional health of Canadians throughout the country, was completed in the fall of 1972 in collaboration with the provinces. This consisted of physical and dental examinations, anthropometric measurements, detailed dietary studies and biochemical tests on blood and urine samples from approximately 20,000 people representative of the populations of all provinces and the banded Indian and Eskimo population segments. The first report of results, released on November 6, 1973, was an overview of the nutritional status of the general, Indian and Eskimo populations. This revealed a very high prevalence of obesity without grossly excessive caloric intakes, emphasizing the importance of low levels of physical activity as a primary cause. It also revealed significant proportions of the population with sub-optimal intakes and/or amounts in blood or urine of several vitamins and minerals, particularly iron, vitamin D, calcium, vitamin C and folic acid. The nutritional status of native peoples was worse than that of the general population. Vitamin C deficiency was particularly common among Eskimos. Goitre of unknown cause was frequently observed, particularly in the prairie region. Protein status was generally satisfactory, although problems must be watched for in vulnerable groups, such as infants, pregnant women, and the elderly. Individual detailed reports on the findings in each province and for the Indian and Eskimo groups are in preparation, to be followed by reports on

income relationships, food consumption patterns, dental health, and anthropometric status. National priorities for corrective action to improve nutritional status have been developed, and are beginning to take shape. These involve all parts of the national community — the federal, provincial, and local governments, industry, the health professional, educational activities, and the consumer at the community level.

Drugs. The Health Protection Branch regulates both the manufacture and distribution of drugs in Canada. The conditions under which drugs are to be manufactured are described in the Manufacturing Facilities and Control Regulations. They relate to facilities, employment of qualified personnel, quality control procedures, maintenance of records, and a suitable system to enable a complete and rapid recall of any batch of drugs from the market. Pharmaceutical plants are regularly visited by inspectors to ensure that the drugs produced meet the quality standards required for sale in Canada.

When a new drug with unknown properties is to be placed on the market, the manufacturer is required by law to provide specified information, including a quantitative list of all ingredients, evidence of clinical effectiveness, the formulation of dosage forms and reports of any adverse effects. This information is studied carefully to ensure that the drug is safe and effective for the purposes claimed. Even after a new drug is on the market, its sale can be banned by the Health Protection Branch if the Adverse-Drug-Reaction Program indicates that the drug is unsafe and injurious. The Drug Quality Assessment Program aims at producing objective evidence of the quality of drugs already on the Canadian market and disseminating it to members of the health professions, governments and the general public. Plants manufacturing biologicals such as serums and vaccines must also be licensed according to specifications of the Health Protection Branch, whether they are located in Canada or abroad.

Another major objective of the Branch is to enable the public to purchase high quality drugs at the cheapest price. This program includes integrated action involving inspection of manufacturing facilities, assessing of claims and clinical equivalency of competing brands, and providing information to professionals concerned and to the general public.

Non-medical use of drugs. The objectives of the Non-Medical Use of Drugs Directorate may be described under four main headings: prevention, to develop and stimulate programs intended to prevent mind-altering drugs being used in ways that may result in physical, mental and social health problems; treatment, to stimulate the development of effective means of dealing with the immediate physical and mental problems caused by the use of mind-altering drugs; rehabilitation, to stimulate the development of effective means of restoring casualties of mind-altering drugs to health; and education, to develop and promote information and education programs aimed at preventing drug abuse and at persuading smokers to stop and young persons not to start.

Environmental health. The Environmental Health Directorate is responsible for studying the adverse effects on health of technological and social environments. The Directorate also has a responsibility to develop health hazard assessments from exposures to air- and water-borne pollutants in the occupational, home, and general environments. Research on radiation hazards is conducted and environmental and occupational exposures are monitored. The Directorate is responsible for the enforcement of the Radiation Emitting Devices Act and that portion of the Food and Drugs Act dealing with medical devices and radioactive pharmaceuticals.

Disease control. In the area of communicable disease control the Laboratory Centre for Disease Control Directorate is involved in the development and implementation of preventive, diagnostic, quality control, and other measures directed to combat communicable disease agents. Other activities entail developing methods for detecting and preventing disease, producing and distributing standardized diagnostic agents to federal, provincial and other health organizations, and providing a national reference service for identification of disease-producing bacteria, viruses and parasites. Through the Epidemiology Division, the Branch assists in control of infectious and other diseases by disease surveillance, epidemiological studies and by providing assistance in epidemics.

5.1.3 Other health-related services

Medical research. Most federal grants supporting health science research in universities and hospitals are channelled through the Medical Research Council. The work of the Council and

other health research programs of the Department of National Health and Welfare are described in Chapter 9.

Health economics and statistics. The Health Economics and Statistics Division in the Health Programs Branch provides socio-economic research and advisory services in a variety of fields including medical care, hospital care, community health services, health expenditure, manpower resources, and other matters relating to health costs and utilization. The Division also serves as a national centre for socio-economic research in the health field to produce research reports and publications designed to increase public understanding of the organization, cost, and performance of Canada's health services and resources.

Health planning. The Long Range Health Planning Branch is concerned with identifying and assessing major issues and trends in the health field which have either not yet clearly emerged or on which no consensus has yet been reached. In a sense the Branch tries to bring into focus the unstable or unpredictable elements of the health field so that they can be considered by policy makers. By comparison the operating Branches tend to plan more in the implementational and operational elements.

Specialists in the long range health planning group are available in the following fields: policy review, medicine, lifestyle health problems, medical sociology, health status indicators, health care organization, quantitative methods, and pharmaceutical economics.

The National Health Grant was established in April 1969 to stimulate research studies, service demonstrations and training activities of national significance for the improvement of health services. Contributions from this grant may be made to provincial or municipal governments and to any agency, association, corporation, institution, or individual for work in the health field. Awards to date have been mainly in support of training of research personnel in the health care field and for research projects related to analysis of quality of health care and health care delivery.

In April 1973, the National Health Grant was extended to include the Public Health Research Grant which had previously allocated funds for research in disease prevention, epidemiology, health promotion and environmental health. The amalgamation was expected to permit a more unified approach to development priorities as well as to ease certain administrative problems. The grants are administered by the Research Programs Directorate of the Health Programs Branch.

Consultative and technical services. The Department of National Health and Welfare extends technical advisory services to provincial agencies, universities and other organizations for the development of health programs, health manpower and health research. Consultative services are available through the various administrative units of the Department responsible for federal-provincial health care programs such as hospital insurance, medical care insurance and health grants programs that have a service, demonstration, research or educational objective: the Non-Medical Use of Drugs Program, the Family Planning Grant, the National Health Grant (now including the Public Health Research Grant), and the grants for health manpower development. Consultants are engaged in health facilities design and in most areas of community health including mental health and health education. Other technical advice is available through programs directly operated by the Department for health protection including the safety of foods, drugs, and health appliances, environmental health, the Laboratory Centre for Disease Control and other specialized areas.

5.1.4 International health

Canada actively assists and co-operates with the World Health Organization (WHO) and the other specialized agencies of the United Nations whose programs have a substantial health component or orientation. Health training is provided for a number of persons coming to Canada each year under the WHO/PAHO Fellowships Program.

Canadian experts in health legislation, health administration, environmental health, nursing, and related areas undertook specific assignments abroad during the year in response to requests from the World Health Organization and the Pan American Health Organization.

The Canadian International Development Agency (CIDA) assisted in the construction of a Public Health Unit in Cameroon, one of the three components of the University Centre for Health Sciences, a new medical and paramedical training centre emphasizing preventive medicine and public health. The unit was completed at the end of May 1973, and the project as

a whole began operating in September 1973. CIDA also provided Canadian advisers and equipment for a public health training program in Vietnam.

To carry out Canada's obligations under the International Health Regulations, the Department of National Health and Welfare maintains quarantine measures for ships and aircraft entering Canadian ports and provides accommodation and medical care for persons arriving in Canada who require quarantine.

The Department is responsible for the enforcement of regulations governing the handling and shipping of shellfish under the International Shellfish Agreement between Canada and the United States. Other responsibilities include the custody and distribution of biological, vitamin, and hormone standards for WHO and certain duties in connection with the Single Convention on Narcotic Drugs, 1961, as well as Canada's representation on the International Narcotic Control Board of the United Nations.

5.1.5 Fitness and amateur sport

Canada's Fitness and Amateur Sport Program seeks to increase the numbers of participants at all levels of competitive and non-competitive physical activity and to raise the skills with which they participate. The Fitness and Amateur Sport Act of 1961 provides \$5 million for this purpose. A recent decision to increase this amount will make \$20 million available annually by 1975.

At first the program sought to strengthen the physical-education profession through scholarships and research fellowships; assist sport and recreation associations through grants for annual meetings, national championships and clinics; develop community programs through a series of federal-provincial cost-sharing agreements; and provide information. In 1969 an extensive review of the program was begun which resulted in significant changes. The needs of the ordinary participant were distinguished from those of the élite athlete and the program accordingly was divided into two: Sport Canada, concerned with the competitive excellence of Canada's athletes; and Recreation Canada, primarily interested in encouraging participation in activities oriented to fitness and recreation.

Increased attention is being given to coaching and technical development, improving the administrative skills of the sport and recreation agencies, special events like the Canada Games and the Arctic Games, and special assistance to student athletes. The two aims of the federal program will be brought even more clearly into focus in 1973-74. Game Plan '76, which receives most of its funding from Sport Canada, will be preparing Canada's athletic participation in the 1976 Olympics. At the same time, increased emphasis will be placed on health, as Recreation Canada will be drawing more attention to physical fitness and fitness-testing activities.

The National Advisory Council on Fitness and Amateur Sport, consisting of not more than 30 appointed members with at least one from each province, continues to consider problems and questions connected with these activities and advise the Minister of National Health and Welfare.

5.2 Provincial and local health services

The responsibility for regulation of health care, operation of health insurance programs and direct provision of some specialized services rests with the provincial governments; some health responsibilities are delegated to local authorities. Although each of the provinces assigns primary responsibility for health to one department the pattern of distribution of function varies from one province to another. In Alberta, Manitoba and Quebec, health and social services are combined within the same department. Other provinces maintain liaison between departments responsible for these related services.

In a number of provinces, health insurance plans and some specialized programs are administered by semi-autonomous boards or commissions. Some of these report directly to a minister of health, others are under the jurisdiction of a deputy minister. In provinces such as New Brunswick and Ontario health insurance programs are operated directly by the health departments.

In each province, both institutional and ambulatory care for tuberculosis and mental illness is provided by an agency of the department responsible for health. Increasing attention in these programs is directed to preventive services. Programs related to other particular health problems such as cancer, alcoholism and drug addiction, venereal diseases and dental condi-

tions have been developed by government agencies, often in co-operation with voluntary associations. A number of provincial programs have been directed to meet the needs of specific population groups such as mothers and children, the aged, the needy and those requiring rehabilitation care.

Environmental health responsibilities, involving education, inspection and enforcement of standards, are frequently shared by health departments and other agencies.

Public health or community health units are among the most decentralized. Some of these units have taken on responsibility for such things as local health education, school health and organized home care. Although local and regional involvement in health services has been concentrated in hospital planning and some public health aspects, several provinces have inaugurated district and regional boards which participate in the co-ordination of all health-related services in their areas.

5.2.1 Hospital and institutional care

Newfoundland, Saskatchewan, Alberta and British Columbia operated hospital insurance plans prior to the proclamation of the Hospital Insurance and Diagnostic Services Act in 1957. These provinces and Manitoba entered federal-provincial agreements on July 1, 1958, the earliest possible date under the new Act. Prince Edward Island, Nova Scotia, New Brunswick and Ontario followed in 1959, the territories in 1960 and Quebec in 1961. Effective January 1, 1965, Quebec elected to accept cost-sharing tax abatements in lieu of hospital insurance payments under the Established Programs (Interim Arrangements) Act.

Plans are administered by provincial departments of health or social affairs in some provinces, and by separate commissions in others. In some provinces, hospital insurance and medical care insurance are combined under one administration.

Coverage is automatic or compulsory in most provinces for all residents; however, in Ontario some persons are eligible to remain outside the plan as noted below, while in Alberta a resident who elects to remain outside the medical care plan must also opt out of the hospitalization plan.

Provincial plans insure all approved available in-patient services at the standard ward level as indicated in the federal Act and agreements. In view of the federal requirement all provinces guaranteed to provide these services upon entering into agreements and there has been virtually no change in the range of services insured on an in-patient basis during the years since the Act took effect.

Out-patient services have remained an option of the province. In the initial years of operation under the Act many provincial plans provided only limited out-patient services; however, there has been a continuous improvement in coverage throughout the years and all provinces now provide a fairly comprehensive range of insured out-patient services.

All plans pay for insured in-patient services in other provinces of Canada at the rates prevailing in those provinces, but approval of the Commission is required by Nova Scotia and Prince Edward Island except for emergency care. For in-patient services outside Canada, limits on rates and the volume of services apply in most provinces. Payments for out-of-province insured out-patient services are generally limited by the rates payable within the province with restrictions on service volumes. Nova Scotia makes no payment for out-patient care outside the province.

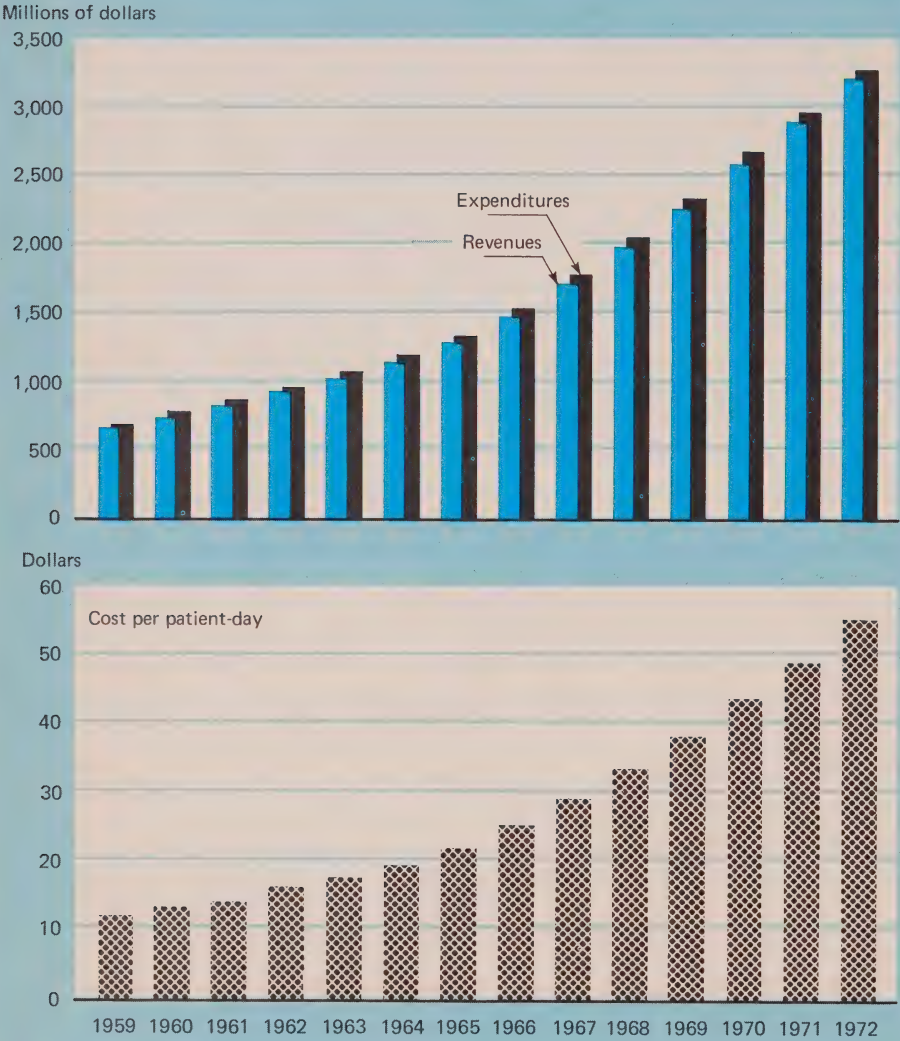
Some plans also insure services which are excluded under the federal Act and are consequently not subject to cost sharing. Coverage in psychiatric hospitals is provided by Nova Scotia and Ontario. Where medically necessary, care in nursing homes is provided in Ontario, Manitoba and Alberta subject to an authorized charge. Ontario also provides essential ambulance services at a modest cost, and physiotherapy, occupational and speech therapy in non-hospital facilities. Alberta and Manitoba provide care in senior citizens lodges or hostels subject to appropriate charges. Physiotherapy services in non-hospital facilities are available in Alberta and Saskatchewan.

Provinces finance their portion of the cost of sharable hospital care through a variety of methods including general revenue, premiums, sales or property tax, authorized charges payable at the time of hospitalization, or various combinations of these sources. Newfoundland, Prince Edward Island, New Brunswick, Quebec, Manitoba, Saskatchewan and the Yukon Territory finance their programs from general revenues. Other provinces use general revenue to some extent to supplement other sources of revenue. Alberta, British Columbia and the

Northwest Territories levy authorized charges. Nova Scotia levies a provincial sales tax. Ontario charges a monthly premium of \$11 for single persons and \$22 for families for both hospital and medical care. There is a compulsory payroll deduction in relation to establishments in Ontario with 15 or more employees including the employer, but with respect to other persons the program is available on a voluntary basis. In Alberta the joint premium charge for medical care and hospital insurance is \$5.75 per month for single persons and \$11.50 for families. No premiums are payable in Ontario or Alberta by persons 65 years of age or over. Exemptions also apply to persons in receipt of provincial welfare.

Alberta, British Columbia and the Northwest Territories levy authorized charges directly to patients for insured services. In Alberta in-patients of general hospitals are charged \$5 for

Revenues and expenditures of public hospitals¹
and cost per patient-day, 1959-72



1. General, allied special, mental and tuberculosis.

the first day of care, while patients receiving auxiliary (chronic) hospital care are charged \$3 a day commencing with the 121st day of care.

In British Columbia, in-patients pay \$1 a day and in the Northwest Territories \$1.50. In British Columbia there is also a charge of \$1 or \$2, for specified out-patient services.

Some provinces charge for services which are additional to the provisions of the federal Act. For example, insured residents in Ontario pay \$5 for ambulance services with a mileage charge beyond 25 miles; Ontario imposes a charge of \$4.50 a day in nursing homes; Manitoba charges \$4.50 in personal care homes, extended treatment centres, and hostels; Alberta charges \$3 for standard ward accommodation in nursing homes.

5.2.2 Medical care and related services

By early 1972 all 10 provinces and the two sparsely-settled territories of the North had met the criteria stipulated under the Medical Care Act as conditions for federal cost sharing, and virtually the entire eligible population was insured for all medically required services of physicians plus a limited range of oral surgery in approved hospital settings. The principal coverage exclusions (about 0.5% of the total population) are members of the Canadian Armed Forces, the Royal Canadian Mounted Police, and inmates of federal penitentiaries, whose medical care requirements are met under alternative provisions. The principal benefit exclusions are services by physicians that are not medically required (e.g. examinations for life insurance) and services to treat work-related conditions already covered by workmen's compensation legislation.

The federal government contributes, over-all, half of the cost of insured services. The proportion varies somewhat from province to province, depending upon actual provincial cost levels. In 1972-73 the proportions ranged from about 43% in Ontario to just over 91% in Newfoundland.

As with hospital insurance, several methods are used by the provinces to finance their share of the cost. During the early years of the plans, premiums were levied in several provinces to meet part of their share; by 1974 only three provinces and one of the northern territories were employing this mode to raise revenue. British Columbia's plan is totally voluntary; Ontario's is compulsory for employee groups of more than 15 persons and voluntary for other residents. In both plans, payment of premiums is a condition of eligibility to receive insured services. The plans of Alberta and the Yukon Territory require registration as an eligibility condition and registration in most instances is contingent on payment of premiums. In these three provinces and the Yukon premiums are paid on behalf of welfare recipients and other needy residents, and in Alberta and Ontario on behalf of persons 65 years of age or older. There is provision for full or partial premium subsidy on behalf of residents who, while self-supporting, find the cost a financial hardship.

Quebec levies a special employee income tax surcharge plus a comparable tax on employer payrolls to finance part of its share of costs. In all the remaining provinces the entire amount of the provincial share is met from general revenues.

Although in most provinces hospital and medical insurance plans are administered separately, those provinces still employing premiums tend now to regard this mode as representing a financial contribution to the revenue requirements of both plans jointly.

Patients have the right to the physician of their choice, and physicians the right to choose patients.

Some provincial plans insure residents for a variety of benefits not yet eligible for cost sharing by the federal government under the Medical Care Act. Among these can be specified services provided by optometrists, chiropractors, podiatrists (chiropodists), osteopaths and naturopaths.

All provinces have provisions to pay all or part of the cost of additional services required by residents in financial need under their social assistance programs. These costs are shared 50-50 by the federal government under the Canada Assistance Plan Act. The range of benefits varies from province to province, but may include such services as eyeglasses, prosthetic appliances, dental services, prescribed drugs, home care services and nursing home care.

Self-supporting residents in Canada seeking insurance coverage for services not included in the two government-administered hospital and medical insurance programs continue to have recourse to the private sector whether commercial or non-profit. Private carriers market plans providing benefits in such areas as the extra cost of semi-private and private ward accom-

modation in hospital and portions of the costs of drugs, dental care, special nurses and prosthetic appliances. The levels of utilization and cost of benefits in these areas are typically controlled through such administrative devices as restrictions on enrolment, waiting periods, exclusions for pre-existing conditions, deductibles and co-charges levied on the patient at the time of service.

In all provinces the characteristic mode of paying privately-practising physicians (who comprise the bulk of doctors serving patients) is a fee for each insured service rendered. The aggregate amount of the fees is usually negotiated between insurance plan and provincial associations of physicians. In most circumstances physicians accept what they receive as payment in full for their services. There are provisions, however, which vary from province to province, that enable physicians to bill patients for additional amounts.

Physicians wishing to extra-bill (and/or collect all charges from patients directly) typically are required to opt out. Generally, such physicians are required to formally inform their patients of their intention before billing and sometimes, also, to obtain the patient's approval in writing. A few insurance plans, moreover, require the physician to inform them of the amount of the extra charges. Opting out is an option chosen by up to 10% of doctors in some provinces and by no doctors in other provinces.

5.2.3 Mental health

Among provincially operated health services, mental health activities represent one of the largest administrative areas in expenditure and employees. In 1971, mental institutions cost \$436 million, while their personnel numbered 52,000.

No adequate measure of mental disorders exists, but during 1973 the number of in-patients under care was 58,000; there were 121,000 admissions or readmissions to mental institutions, and (in 1971) 223,000 patients were treated in mental health clinics and psychiatric out-patient departments. Beyond these hospitals and clinics, however, are many other cases. The public programs aimed at early detection of behavioural disturbance demonstrate that most mental patients recover if treated early enough. Mental health divisions of health departments control standards of care and treatment in provincial mental health facilities.

At the end of 1973, 207 separate in-patient facilities and 115 psychiatric units in general hospitals were caring for the mentally ill; most separate facilities are operated by the provinces. The majority of hospitalized patients reside in the 43 public mental hospitals, usually in rural settings serving wide areas. Most mental hospitals have undergone successive additions to their original structures and many have pioneered new treatments for mental illness. Several provinces are arranging for boarding-home care with the federal government sharing the cost of maintaining needy patients in such homes under the Canada Assistance Plan. In Nova Scotia and Ontario hospital insurance covers all mental institutional care and treatment. In every province at least 85% (nationally, 94%) of the revenue of reporting mental institutions in 1971 was provided by the provincial government or the provincial insurance plan.

Community mental health facilities are being extended beyond mental institutions to provide greater continuity of care, deal with incipient breakdown, and rehabilitate patients in the community. Psychiatric units in general hospitals contribute by integrating psychiatry with other medical care and making it available to patients in their own community. In 1973, the 115 psychiatric units, which had 3,890 patients as the year closed, admitted 44% of the total admissions to all kinds of mental institution. In-patient services in psychiatric units are benefits under all provincial hospital insurance plans. Some provinces have small regional psychiatric hospitals to facilitate patient access to treatment and the complete integration of medical services. Day care centres, allowing patients to be in hospital during the day and at home at night, have been organized across the country. Community mental health clinics, some provincially operated, others municipally, and psychiatric out-patient services have been developed in all provinces.

Specialized rehabilitation services assist former patients to function more adequately and are operated by mental hospitals and community agencies. They include sheltered workshops that pay for work and provide training and halfway houses in which patients can live and continue to receive treatment while becoming settled in a job.

Alcoholism is a disease afflicting at least 2% of adult Canadians. It is treated in hospitals, out-patient clinics, hostels, long-term residences or farms, and special facilities for the alcoholic offender. Official and voluntary agencies carry out public education, treatment,

rehabilitation and research. Among these agencies are Alcoholics Anonymous, the Alcoholism and Drug Addiction Research Foundation of Ontario, the Alcoholism Foundation of British Columbia, the Alcoholism Foundation of Manitoba and the Nova Scotia Alcoholism Research Foundation. Institutional treatment of narcotic addicts has not prevented relapses upon return to the community; it is speculated that proneness to addiction is the result of multiple adverse psychological, environmental and perhaps physiological factors. Community treatment programs have been established under the aegis of the Narcotic Addiction Foundation of British Columbia and the Ontario Alcoholism and Drug Addiction Research Foundation, supported primarily by provincial funds.

Facilities for mentally retarded persons include day training schools or classes, summer camps and sheltered workshops as well as residential care in institutions. With the realization that many retardates can be taught, these facilities provide for social, academic and vocational training; some are able to profit from academic education, some can master only self care. Many are taught manual skills in the training-school workshops and some are placed in jobs in the community.

Emotionally disturbed children presenting personality or behaviour disorders are treated at hospital units, community clinics, child guidance clinics and other out-patient facilities.

5.2.4 Specific diseases or disabilities

Heart disease. The death toll from heart disease in Canada in 1972 was 56,228, amounting to 258 deaths for each 10,000 persons. The male rate was higher than the female (310 against 205). Among men aged 45 to 64 years heart disease accounted for 41% of all deaths, and the single diagnostic class Ischemic Heart Disease (in which the heart muscle has its own blood supply restricted) killed 9,355 of the 24,452 men in this age group who died in 1972. In 1971, heart disease (including all hypertensive disease) required 4.2 million days of hospital care in general and allied special hospitals.

The Canadian Heart Foundation, inaugurated in 1956, had by early 1973 devoted \$30.5 million to cardiovascular research in the universities and hospitals of Canada; its 1972-73 budget alone provided \$4.1 million. The Medical Research Council expended \$3 million on cardiovascular research in 1972-73.

Cancer. As the second leading cause of death in Canada, cancer accounts for about one of every five deaths, most of them occurring in the middle and later years of life. The standardized death rate from cancer declined slightly, from 137.5 per 100,000 population in 1970 to 136.2 in 1971, and that for females alone fell from 114.2 in 1970 to 111.5 in 1971. The standardized rate for males was virtually unchanged at 160.2 in 1970 and 160.3 in 1971. Statistics on the incidence of new cancer cases will be found in Table 5.15.

Special provincial agencies for cancer control, usually in the health department or a separate cancer institute, carry out cancer detection and treatment, public education, professional training, and research in co-operation with local public health services, physicians and the voluntary Canadian Cancer Society branches. Although the provisions are not uniform, cancer programs in all provinces provide a range of free diagnostic and treatment services to both out-patients and in-patients. Hospital insurance benefits for cancer patients include diagnostic radiology, laboratory tests and radiotherapy. The cancer control programs in Saskatchewan and New Brunswick also pay for medical and surgical services; in most provinces these costs are covered under the public medical care insurance schemes.

Tuberculosis and respiratory diseases. Tuberculosis statistics reported by Statistics Canada for 1972 show little or no change from the 1971 figures: new active cases totalled 3,909, or 17.9 per 100,000 population, and reactivated cases numbered 570 or 2.6 per 100,000. There were 453 deaths from tuberculosis or 2.1 per 100,000, compared with 447 deaths in 1971. Altogether, Canadians reported to be under treatment for tuberculosis in 1972 numbered 9,019 while an additional 12,865 susceptible persons received prophylactic drugs as a preventive measure. Further details on the incidence of tuberculosis will be found in Section 5.4.4 and Table 5.16.

Provincial health departments, assisted by voluntary agencies, conduct anti-tuberculosis case-finding programs through community tuberculin-testing and X-ray surveys with special attention to high-risk groups, routine hospital admission X-rays and follow-up of arrested cases. However, practising physicians detect the greatest number of new cases.

BCG vaccine, estimated to be effective for 80% of those vaccinated, is used in most provinces to protect high-risk groups. Quebec and Newfoundland routinely immunize children and in the Yukon Territory, BCG is routinely administered to all newborn. Treatment, including hospital care, drugs and rehabilitation services, is free in all provinces. Chemotherapy has shortened hospital stay and facilitated out-patient or domiciliary care.

Venereal diseases. Public health authorities estimate that the real incidence of venereal diseases may be three to four times the number of cases actually reported. The 1972 figure of 3,064 cases of syphilis or 14.0 per 100,000 population was substantially above the 1971 figure of 2,489, which was 11.5 per 100,000 population. The total figure for gonorrhea cases in 1972 was 41,467 or 189.9 per 100,000, a marked increase over the 158.9 rate for 1971, the highest since 1947. In 1972, one fifth of all gonorrhea cases were reported for the 15- to 19-year age group while 35.9% were aged 20-24 years. Factors affecting this rise in gonorrhea incidence are increasing sexual permissiveness combined with reliance on contraceptive methods that do not prevent the spread of infection.

The real impediments to control of venereal diseases are negative attitudes and behaviour patterns, sometimes the result of ignorance, that permit cases to go undiagnosed or untreated and contacts unlocated. Provincial health departments have expanded public VD clinics, which provide free diagnostic and treatment services at convenient hours. In some areas these departments pay private physicians to give free treatment to indigents. In addition, the provinces supply free drugs to physicians for treating private cases. Local departments of health or district health units carry out case-finding, follow-up of contacts, and health education programs, assisted by provincial directors of venereal disease control.

Other diseases or disabilities. Many services for persons with chronic disabilities, such as heart disease, arthritis, diabetes, visual and auditory impairments, and for paraplegics, have been initiated by voluntary agencies assisted by federal and provincial funds. Today, treatment for specific conditions is available at hospital out-patient clinics and in-patient or day centres, at separate clinics and rehabilitation centres, and under home care programs.

Medical rehabilitation services, which offer physical medicine, physiotherapy, occupational therapy, speech therapy and social services, carry out assessment and remedial treatment and training. Some facilities, especially rehabilitation centres, also provide vocational rehabilitation and special education services. Mainly established in teaching hospitals located in the larger urban centres, these services financed under the provincial hospital insurance programs at the end of 1970 numbered 36 hospital rehabilitation units, 15 separate in-patient rehabilitation centres (with a total of 945 beds) and five out-patient rehabilitation centres. In addition, there were two private hospitals for crippled children, about 20 out-patient rehabilitation centres for children supported by voluntary and provincial funds and five rehabilitation centres for injured workmen.

Most large general hospitals conduct out-patient clinics for various diseases and disabilities including arthritis and rheumatism, diabetes, glaucoma, speech and hearing defects, heart diseases, and orthopedic and neurological conditions.

Special schools or classes for various groups of handicapped children are, typically, operated by school boards whereas most of the schools for the deaf and for the blind are residential schools operated by provincial governments.

5.2.5 Public health

Provincial and local structure. Provincial health departments, in co-operation with the regional and local health authorities, administer such services as environmental sanitation, communicable-disease control, maternal and child health, school health, nutrition, dental health, occupational health, public-health laboratories and vital statistics. Most provinces have delegated certain health responsibilities to health units in rural regions and to municipal health departments in urban centres. Several provinces also provide services directly to their thinly populated northern parts. Certain regulatory and preventive services, including case-findings, screening, diagnosis and referral, health education, personal health care, and supervision in certain areas of treatment services conducted through clinics and home visits, have continued to be the responsibility of local health authorities.

As metropolitan areas have mushroomed and population densities increased, effective administration has required a broader geographical base. Some smaller local health services are

provided or supervised by a regional health unit, or a regional structure intermediate between provincial departments and local health units provides technical advice. Some urban boards of health in metropolitan areas have been amalgamated to increase their effectiveness.

Maternal and child health. Public health nurses employed by local health services carry out programs of preventive health care to mothers, the newborn and children through clinics, home and hospital visits and school health services. All provincial health departments have established maternal and child health consultant services to co-operate with the public health nursing services. The maternal and child health services also undertake studies in maternal and child care, including hospital care, and assist in the training of nursing personnel.

Nutrition and health education. Provincial health departments and some city health departments employ consultants in nutrition to extend technical guidance and education to health and welfare agencies, nursing homes and other care institutions and hospitals. They also provide diet counselling to selected patient groups such as diabetics, and conduct nutritional surveys and other research. Most provincial health departments have a division or unit of health education under a full-time professional health educator to promote public knowledge of health needs and measures. These divisions provide educational materials to other divisions of the health department, local health authorities, schools, voluntary associations and the public. Many educational activities are directed to accident prevention and to changing habits harmful to health, such as cigarette smoking and the excessive use of alcohol and other drugs. All health workers carry out health education as part of their normal activities.

Dental health. Public dental health programs at the provincial level have been largely preventive but increasing emphasis is now being given to dental care. Dental clinics conducted by local health services are generally restricted to pre-school and younger school-age groups. A number of provinces send dental teams to remote areas and subsidize resident dentists to practise in areas lacking such services, while the four western provinces have dental care schemes of varying coverage for welfare recipients. Other dental health programs are directed to the training of dentists and dental hygienists, conducting dental surveys, and the extension of water fluoridation.

Communicable disease control. The larger provincial health departments have separate divisions of communicable disease control headed by full-time epidemiologists; in others, this function is combined with one or more community health services. Local health authorities organize public clinics for immunization against diphtheria, tetanus, poliomyelitis, whooping cough, smallpox and measles. They also engage in case-finding and diagnostic services in co-operation with public health laboratories and private physicians. Special services for tuberculosis and venereal disease have already been described.

Public health laboratories. All provinces maintain a central public health laboratory and most have branch laboratories to assist local health agencies and the medical profession in the protection of community health and the control of infectious diseases. Public health bacteriology (testing of milk, water and food), diagnostic bacteriology, and pathology are the principal functions of the laboratory service, with medical testing for physicians and hospitals steadily increasing in volume.

Occupational health. Services designed to prevent accidents and occupational diseases and to maintain the health of employees are the common concern of provincial health departments, labour departments, workmen's compensation boards and industrial management. Provincial agencies regulate working conditions and offer consultant and educational services to industry. All provinces have legislation (factory Acts, shop Acts, mines Acts, workmen's compensation Acts) setting standards for health safety and accident prevention on the job. Most provinces maintain environmental health laboratories that study industrial health problems such as the effects of air and noise conditions on workers.

5.2.6 Emergency health services

The Emergency Health Services Division, established in 1959 within the federal Department of National Health and Welfare, encourages the provinces, with the support of an advisory committee, to develop their own emergency health services divisions. These are organized under a provincial director who is generally assisted by a health-supplies officer and a nursing consultant. Federal Emergency Health Services are represented in the provinces by the Regional Director of the Medical Services Branch.

The fourfold task of provincial emergency health services is to ensure that vital health functions are maintained during or reorganized after an emergency or disaster, to encourage and assist local planners in the establishment of emergency medical units, to train health professionals and the general public in emergency health procedures, and to place emergency medical units from the national stockpile at strategic locations.

5.3 Physicians

5.3.1 Number

As of December 31, 1972 there were 34,508 active civilian physicians in Canada including interns and residents (Table 5.1). Well over one third, 13,364, were located in Ontario. That province and British Columbia had the most favourable population-to-physician ratios at 591 and 595, respectively, compared with the national figure of 637.

Province-to-province comparisons of ratios that include all physicians are to some extent distorted because of the differing proportions of interns and residents to other physicians in each province. If the intern-resident category is excluded, the most favourable ratio, 663, was in British Columbia, compared with the national figure of 768. Ontario, at 714, was the only other province with a population-to-physician ratio below the national average.

Table 5.1 also shows trends since 1962 in numbers and ratios for all active civilian physicians combined and for physicians excluding interns and residents. In each case the figures include physicians engaged in such activities as administration, teaching and research within the medical field, as well as those in the clinical practice of medicine.

5.3.2 Earnings

The average gross professional earnings of self-employed fee-practice physicians in 1971 were \$56,824, 11.8% higher than in 1970. The average annual rate of increase over the period 1961 to 1971 was 8.2%. The highest average gross earnings in 1971 were reported in Alberta at \$62,188, followed closely by Ontario at \$61,657. Manitoba was close to the nation-wide average at \$56,517. In the remaining provinces the average gross earnings ranged from \$55,081 in Newfoundland to \$48,865 in Nova Scotia. Generally, through the decade 1961-71, average gross earnings have been at a higher level in Newfoundland, Ontario and the western provinces than in Quebec and the Maritime Provinces. But in 1971 earnings in Prince Edward Island, Quebec and New Brunswick rose swiftly to approach the national average.

The net returns to physicians, after deduction of the expenses of professional fee practice, reveal some shifting in geographic patterns compared with earlier years. Average net earnings for Canada as a whole were \$39,203 in 1971, 14.1% higher than in 1970. The highest provincial average net income was reported by Ontario and Quebec, at \$41,803 and \$41,131, followed by Alberta at \$40,357.

The unusual over-all increase in the average professional earnings in 1971 over the previous year was primarily the result of introduction of provincial medical care programs in Quebec and Prince Edward Island in late 1970 and New Brunswick in January 1971. The effects were magnified by the previous relatively low levels of insurance coverage in these three provinces. For these three provinces combined, the rates of increase in the average gross and net professional earnings of physicians in 1971 over the previous year amounted to 37.0% and 38.4%, respectively, while the corresponding increases for the rest of the country for the same period were only 4.5% and 3.8%.

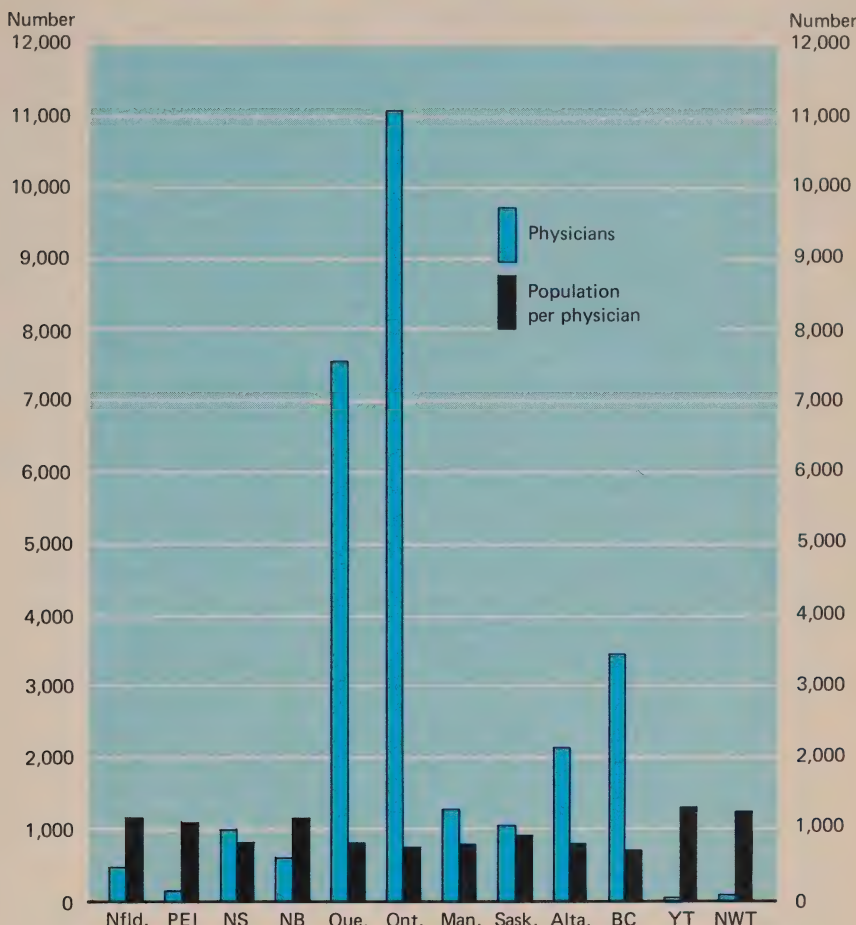
5.4 Health statistics

5.4.1 Government expenditures

In the years ended March 31, 1966-72, expenditures by all levels of government on health tripled, from \$1,603 million to \$4,855 million. If these figures are adjusted to take account of the growth in population, the increase in per capita expenditures from \$81 to \$224 was 176%. Government expenditures may also be measured in relation to major economic indicators; on this basis, annual government expenditures on health and social welfare over the period 1966-72 rose from 3.7% to 6.4% of personal income and from 2.8% to 5.1% of gross national product. Table 5.2 gives the relevant statistics.

The federal share of health expenditures rose from 27.1% in 1966-67 to 33.0% in 1971-72

Physicians and population per physician, by province, 1972



while the provincial share fell from 70.0% to 64.9% and municipal outlays varied erratically. Compared with the previous year, health expenditures by all levels of government in 1971-72 increased by \$627 million or 15%. This may be compared to the rise of \$818 million or 24% in 1970-71 over 1969-70. Expenditures by the federal and provincial governments increased by 22.6% and 13.0%, respectively, from 1970-71 to 1971-72, principally because of constantly rising expenditures under the Hospital Insurance and Diagnostic Services Act and the Medical Care Act.

5.4.2 Hospital statistics

Canadian hospitals are categorized for statistical purposes according to type of ownership: public, private or federal; and type of service: general, allied special (chronic, convalescent, rehabilitation, maternity, communicable diseases, children's or orthopedic), mental or tuberculosis. General hospitals, which account for the largest proportion of beds, are divided into teaching (full and partial teaching) and non-teaching (with and without long-term units) types, which are further subdivided into varying bed-size groups based on rated bed capacity.

Data pertaining to the number of hospitals in operation (Table 5.3), their classification and rated bed capacity (Table 5.4) were available as at January 1, 1973 but 1971 data were the latest available for all other tables in this Section.

Table 5.3 shows that the number and bed capacity of hospitals operating in Canada have remained relatively stable in recent years. Table 5.4 gives the number and bed capacity of public, private and federal hospitals operating in Canada in 1973 classified by province and by type of service. In 1973 public hospitals accounted for 93.9% of total rated bed capacity of all hospitals followed by federal hospitals (3.6%) and private hospitals (2.5%). Corresponding 1972 proportions of 93.8%, 3.6%, and 2.6%, respectively, were almost identical. The proportion of rated beds in general and allied special hospitals as a group has been increasing in recent years while rated bed capacity in mental hospitals and tuberculosis sanatoria on the whole has decreased. In 1973 general hospitals accounted for 58.9% of total rated beds as compared to 57.4% in 1972 (5.5 beds per 1,000 population in 1973). Provincially, Saskatchewan had the highest ratio of general hospital beds per 1,000 population, i.e. 7.5 in 1973 and 7.4 in 1972, while Quebec reported the lowest ratio with 4.7 beds per 1,000 population in both 1973 and 1972. The rated bed capacity of mental hospitals declined from 27.8% of total rated beds in 1972 (2.7 per 1,000 population) to 26.6% in 1973 (2.6 per 1,000 population); allied special hospitals increased from 13.4% in 1972 (1.4 per 1,000 population) to 13.5% in 1973 (1.4 per 1,000 population); tuberculosis sanatoria constituted 1.1% in 1973 (0.1 per 1,000 population) declining from 1.4% in 1972 (0.1 per 1,000 population). Rated beds per 1,000 population for all hospitals as a group declined from 9.9 in 1972 to 9.5 in 1973.

Total adult and child admissions to all Canadian hospitals increased 3.2% between 1970 and 1971 reaching in excess of 3.7 million or 172.4 patient admissions per 1,000 population. A study of Table 5.5 reveals that admissions to public general hospitals, the major factor in this rise, increased by 3.6% from 1970 to reach over 3.3 million in 1971; the number of patient admissions rose from 152.1 to 156.1 per 1,000 population.

Admissions to public mental hospitals, which totalled more than 51,500 in 1971, decreased by 9.2% as admissions per 1,000 population declined from 2.7 to 2.4. Over the same period, admissions to public tuberculosis sanatoria dropped by 12.2% to 5,265, a decline per 1,000 population from 0.3 to 0.24. The average daily population in all Canadian hospitals decreased by 0.3%. Public general hospitals made up slightly more than one half (51.9%) of the 1971 average daily population compared with 50.7% in 1970. Public mental hospitals, the second largest group, accounted for 29.7% of the 1971 average daily population as against 31.0% in 1970.

The average length of stay of adults and children in public general hospitals decreased from 10.1 days in 1970 to 9.9 days in 1971 (Table 5.6). Average length of stay was significantly correlated to bed capacity in general hospitals, rising from 7.1 days in the 1-to-24 bed group of non-teaching general hospitals to 11.7 days in full-teaching general hospitals with 500 or more beds, a reflection of the fact that larger hospitals tend to provide more diversified and complex services. Provincially, average length of stay for public general hospitals as a group ranged from 8.8 days in Alberta and Manitoba to 10.8 days in Quebec. Within the allied special group of hospitals there was considerable variation in the average length of stay extending from 8.5 days for children's hospitals to 13.3 days for the "other" group (maternity, neurological, orthopedic and cancer hospitals) and then climbing sharply to 41.5 days for the convalescent/rehabilitation hospitals and to 234.9 days for chronic/extended care hospitals. Average length of stay for public general and allied special hospitals as a whole declined from 11.5 days in 1970 to 11.3 days in 1971.

Table 5.7 shows that there were almost 324,000 full-time employees (excluding paid medical staff in general and allied special hospitals) in the Canadian hospital industry as a whole in 1971. This figure represents an increase of 4,000 full-time personnel from almost 320,000 reported in 1970. General hospitals as a group employed 193.2 full-time personnel per 100 rated beds, not much change from the group ratio of 193.4 recorded in 1970. Provincially, this ratio varied from 144.5 in Saskatchewan to 222.2 in Quebec in 1971. Taken as a group, general and allied special hospitals reported a ratio of 180.5 full-time personnel per 100 rated beds in 1971 compared to 181.0 in 1970. In mental hospitals there were 104.7 full-time personnel per 100 rated beds in 1971, up from the 79.1 reported in 1970, while in tuberculosis sanatoria this ratio was 188.5 in 1971 as compared to 86.9 in 1970.

Table 5.8 displays the revenues and expenditures of operating public general hospitals for the reporting years 1970 and 1971. Revenues for these hospitals amounted to \$2,138.3 million in 1971 and expenditures were \$2,204.6 million, both amounts representing a 12.0% increase from the comparable 1970 figures. Salaries and wages accounted for 70.1% of expenditures in 1971 while medical and surgical supplies accounted for 3.3% and drugs for 3.0%.

Table 5.9 shows that cost per patient-day was highest for children's hospitals (\$110.01) in 1971, followed by the "other" hospitals group, which includes orthopedic, maternity, neurological and cancer hospitals (\$89.20), and general hospitals (\$65.58). In the provinces, cost per patient-day in general hospitals ranged from \$44.34 in Prince Edward Island to \$78.88 in Quebec.

5.4.3 In-patients

Canadian hospital in-patient statistics for institutions exclusive of mental hospitals and tuberculosis sanatoria are available for most years from 1960 to date. Data are presented by age, sex and diagnostic classification. Similar information on patients treated in mental hospitals and tuberculosis sanatoria were available for some time before that year. Since 1968, statistics on primary surgical operations have been presented as counts of cases separated from hospital, the length of stay attributable to these cases, and appropriate rates. The classification systems currently used are the Canadian Diagnostic List and the International Classification of Diseases, Adapted—eighth revision.

It is recognized that the value of these data is limited in estimating total morbidity since many conditions do not require hospital in-patient treatment. However, the diagnostic standards of hospital-originated records are high, and the more serious and severe cases and conditions are likely to be hospitalized.

Tables 5.10 and 5.11 give hospital separation data by groups of diagnoses. Tables 5.12 and 5.13 show statistics concerning primary operations. In 1971, 3.6 million cases were discharged or died in hospital and 1.8 million primary operations were performed; expressed as rates, these represent 16,587 separations per 100,000 population and 8,230 operations per 100,000 population. It should be noted that these statistics present a count of events, i.e. separations or operations, not persons.

5.4.4 Notifiable diseases and other health statistics

Notifiable diseases. The notifiable diseases most predominant in 1972 were venereal diseases (44,536), streptococcal sore throat and scarlet fever (12,224), infectious and serum hepatitis (7,811), and tuberculosis (3,909). Table 5.14 shows the number of notifiable diseases by province in that year.

Cancer. Statistics Canada started a national cancer incidence reporting system on January 1, 1969 in co-operation with the National Cancer Institute and the nine existing provincial tumour registries: a registry has not yet been organized in Ontario. Participating provinces send a simple notification card with basic patient and diagnostic information for each new primary site of malignant neoplasm discovered. Data provided by this system for 1971 are given in Table 5.15.

Tuberculosis. There were 3,909 new active and 570 reactivated cases of tuberculosis reported in Canada in 1972 for a total of 4,479. Of 9,019 tuberculosis patients being treated at the end of 1972, 1,524 were hospital patients and 7,495 were being treated by drugs on an out-patient drug therapy regime as a safeguard against their developing active forms of the disease. Summary information appears in Table 5.16.

Therapeutic abortions. During 1972, 38,905 therapeutic abortions were carried out in Canada, 38,853 to residents of Canada, as shown in Table 5.17, and 52 to non-residents. The 1971 figures are 30,949, with 26 to non-residents. A quarterly record of therapeutic abortions performed on residents of Canada in 1971 and 1972, distributed by province and territory, appears in Table 5.17. The Table also shows abortions as rates per 100 live births; for all Canada the 1972 rate was 11.2 as against a 1971 rate of 8.6.

Mental health statistics. A total of 120,868 admissions and 123,435 separations from psychiatric in-patient facilities were reported in Canada in 1973. The number of patients on the books of reporting institutions at year-end was 57,042. The ratio of admissions to year-end patients, a measure of the turnover of the in-patient population, rose from 1.65 in 1970 to 2.12 in

1973. The distribution of the psychiatric in-patient movements across the various types of psychiatric institutions is shown in Table 5.18.

5.4.5 Personnel

Nursing salaries. On the whole, salaries of hospital nursing personnel were 16.6% higher in 1972 than in 1970 and varied directly according to academic qualifications. For general duty registered nurses employed in public general hospitals the average annual salary varied from \$7,538 for those classified as graduate nurse only, to \$8,443 for those with a university diploma (one year) in nursing (Table 5.19). Among graduate nurses without additional qualifications in public general hospitals, directors of nursing education received the highest average salary (\$10,681) and general duty nurses (not registered) the lowest (\$6,665). On the average, general duty nurses (registered) without additional qualifications employed in hospitals designated "other" (maternity, neurological, orthopedic and cancer hospitals) earned more (\$7,772) than their counterparts in other types of hospitals.

Registered nurses. Data on registered nurses are collected annually from the registrar of the provincial licensing/registration authorities. The nursing group makes up the largest single component of Health Manpower occupations, approximately 45% of the total. Other professions within the nursing group include psychiatric nurses, qualified nursing assistants and orderlies. The figures for 1972 appear in Table 5.20.

Physiotherapists. Data on physiotherapists were collected for the first time in 1972 as part of the Health Manpower statistical series. The figures shown in Table 5.21 pertain to qualified physiotherapists who are members of either the Canadian Physiotherapy Association or one of the provincial associations.

Radiological technicians. Statistics on radiological technicians were collected for the first time in 1971 as part of the Health Manpower statistical series. Data shown in Table 5.22 pertain to radiological technicians who are members of the Canadian Society of Radiological Technicians.

Sources

5.1 - 5.4.1 Health Economics and Statistics, Health Programs Branch, Department of National Health and Welfare.

5.4.2 - 5.4.5 Health Division, Institutional and Public Finance Statistics Branch, Statistics Canada.

Tables

..	not available	e	estimate
...	not appropriate or not applicable	p	preliminary
—	nil or zero	r	revised
--	too small to be expressed	certain tables may not add due to rounding	

5.1 Physicians and population per physician, 1962-72, and by province, 1972

Year and province or territory	Active civilian physicians		Excluding interns and residents ²	
	Including interns and residents ¹			
	Number	Population per physician ³	Number	Population per physician ³
1962 (Dec. 31)	23,248	808	19,756	951
1963 "	24,082	795	20,041	955
1964 "	24,847	785	20,418	955
1965 "	25,481	779	20,792	955
1966 "	26,528	763	21,615	936
1967 "	27,544	747	22,472	916
1968 "	28,209 [†]	740	22,969	909
1969 "	29,659	714	24,432	867
1970 "	31,166	689	25,657	837
1971 "	32,942 [†]	659	27,439	792
1972 "	34,508	637	28,610	768
1972 (Dec. 31)				
Newfoundland	504	1,065	460	1,167
Prince Edward Island	105	1,086	105	1,086
Nova Scotia	1,147	699	980	818
New Brunswick	656	988	580	1,117
Quebec	9,677	627	7,528	806
Ontario	13,364	591	11,060	714
Manitoba	1,573	631	1,278	777
Saskatchewan	1,140	798	1,008	903
Alberta	2,444	684	2,111	792
British Columbia	3,850	595	3,453	663
Yukon Territory	16	1,250	16	1,250
Northwest Territories	31	1,194	30	1,233
Province unspecified	1	..	1	..
Canada	34,508	637	28,610	768

¹Based on data in *List catalogue*, Canadian Mailings Limited, for 1962 to 1967 and data supplied by Medical Marketing Systems Limited, for 1968 to 1972.

²Estimates of interns and residents for 1962 to 1968 (and for 1971 in the case of one province) based on Statistics Canada data, and data supplied by Medical Marketing Systems Limited for the remaining periods.

³Calculated from Statistics Canada estimates of the population as at Jan. 1 of the following year.

5.2 Total, per capita and percentage distribution of government expenditure on health, by level of government, years ended Mar. 31, 1966-72

Year	Federal	Provincial ¹	Municipal ²	Total
Total expenditure (million dollars)				
1966	485.9	1,054.7	62.1	1,602.7
1967	515.9	1,333.9	57.0	1,906.8
1968	622.4	1,585.2	61.3	2,268.9
1969	750.8	1,823.7	80.1	2,654.6
1970	1,036.8	2,254.0	119.0	3,409.8
1971	1,307.6	2,789.0	131.3	4,227.9
1972	1,603.4	3,152.7	98.7 ^P	4,854.8
Per capita expenditure (dollars)				
1966	24.57	53.33	3.14	81.04
1967	25.61	66.21	2.83	94.65
1968	30.35	77.29	2.99	110.63
1969	36.07	87.62	3.85	127.54
1970	49.11	106.77	5.64	161.52
1971	61.10	130.33	6.14	197.57
1972	74.00	145.50	4.56 ^P	224.05
Percentage distribution				
1966	30.3	65.8	3.9	100.0
1967	27.1	70.0	3.0	100.0
1968	27.4	70.0	2.7	100.0
1969	28.3	68.7	3.0	100.0
1970	30.4	66.1	3.5	100.0
1971	30.9	66.0	3.1	100.0
1972	33.0	64.9	2.0 ^P	100.0

¹Excludes transfer payments by federal government.

²Excludes transfer payments by provincial governments.

5.3 Number and bed capacity of operating public, private and federal hospitals as at Jan. 1; 1971-73

Type	1971		1972		1973	
	Hospitals	Beds	Hospitals	Beds	Hospitals	Beds
General	925	121,009	918	123,071	913	125,253
Allied special	343	27,055	355	28,764	353	28,604
Mental	121	60,357	125	59,553	125	56,466
Tuberculosis	27	3,378	24	2,908	20	2,327
Total	1,416	211,799	1,422	214,296	1,411	212,650

5.4 Number and bed capacity of operating public, private and federal hospitals, by province and type, as at Jan. 1, 1973

Province or territory and category	General			Allied special			Total, general and allied special		
	Hos-pitals	Beds	Beds per 1,000 popula-tion ¹	Hos-pitals	Beds	Beds per 1,000 popula-tion ¹	Hos-pitals	Beds	Beds per 1,000 popula-tion ¹
Newfoundland									
Public	33	2,590	4.8	14	511	0.9	47	3,101	5.7
Private	—	—	—	—	—	—	—	—	—
Federal	—	—	—	—	—	—	—	—	—
Prince Edward Island									
Public	8	715	6.2	1	30	0.3	9	745	6.5
Private	—	—	—	—	—	—	—	—	—
Federal	—	—	—	—	—	—	—	—	—
Nova Scotia									
Public	43	4,274	5.3	4	529	0.7	47	4,803	6.0
Private	1	5	—	—	—	—	1	5	—
Federal	2	547	0.7	—	—	—	2	547	0.7
New Brunswick									
Public	38	4,338	6.6	2	105	0.2	40	4,443	6.8
Private	—	—	—	—	—	—	—	—	—
Federal	—	—	—	—	—	—	—	—	—
Quebec									
Public	126	27,896	4.5	56	8,828	1.5	182	36,724	6.0
Private	8	339	0.1	45	2,508	0.4	53	2,847	0.5
Federal	2	460	0.1	8	1,162	0.2	10	1,622	0.3
Ontario									
Public	190	43,690	5.5	40	6,046	0.8	230	49,736	6.3
Private	7	206	—	51	1,164	0.1	58	1,370	0.1
Federal	5	1,763	0.2	8	32	—	13	1,795	0.2
Manitoba									
Public	80	5,168	5.2	5	1,194	1.2	85	6,362	6.4
Private	—	—	—	1	50	0.1	1	50	0.1
Federal	3	641	0.6	14	51	0.1	17	692	0.7
Saskatchewan									
Public	133	6,679	7.4	8	929	1.0	141	7,608	8.4
Private	—	—	—	—	—	—	—	—	—
Federal	2	109	0.1	1	4	—	3	113	0.1
Alberta									
Public	117	10,844	6.4	29	3,173	1.9	146	14,017	8.3
Private	5	—	—	—	—	—	—	—	—
Federal	—	910	0.5	3	6	—	8	916	0.5
British Columbia									
Public	93	12,053	5.2	23	2,121	0.9	116	14,174	6.1
Private	2	16	—	—	—	—	2	16	—
Federal	3	1,516	0.7	—	—	—	3	1,516	0.7
Yukon Territory									
Federal	3	142	7.1	3	14	0.7	6	156	7.8
Northwest Territories									
Public	6	221	5.8	—	—	—	6	221	5.8
Private	1	13	0.3	—	—	—	1	13	0.3
Federal	2	118	3.1	37	147	3.9	39	265	7.0
Canada									
Public	867	118,468	5.3	182	23,466	1.1	1,049	141,934	6.4
Private	19	579	—	97	3,722	0.2	116	4,301	0.2
Federal	27	6,206	0.2	74	1,416	0.1	101	7,622	0.3

5.4 Number and bed capacity of operating public, private and federal hospitals, by province and type, as at Jan. 1, 1973 (concluded)

Province or territory and category	Type of hospital								
	Mental Hos-pitals	Beds	Beds per 1,000 popula-tion ¹	Tuberculosis Hos-pitals	Beds	Beds per 1,000 popula-tion ¹	Total, all hospitals Hos-pitals	Beds	Beds per 1,000 popula-tion ¹
Newfoundland									
Public	1	827	1.5	—	—	—	48	3,928	7.3
Private	—	—	—	—	—	—	—	—	—
Federal	—	—	—	—	—	—	—	—	—
Prince Edward Island									
Public	2	297	2.6	1	30	0.3	12	1,072	9.3
Private	—	—	—	—	—	—	—	—	—
Federal	—	—	—	—	—	—	—	—	—
Nova Scotia									
Public	5	1,720	2.1	2	352	0.4	54	6,875	8.5
Private	—	—	—	—	—	—	1	5	—
Federal	—	—	—	—	—	—	2	547	0.7
New Brunswick									
Public	3	1,565	2.4	—	—	—	43	6,008	9.2
Private	—	—	—	—	—	—	—	—	—
Federal	—	—	—	—	—	—	—	—	—
Quebec									
Public	34	19,220	3.2	6	804	0.1	222	56,748	9.3
Private	1	72	—	—	—	—	54	2,919	0.5
Federal	—	—	—	—	—	—	10	1,622	0.3
Ontario									
Public	39	16,410	2.1	6	667	0.1	275	66,813	8.4
Private	11	871	0.1	—	—	—	69	2,241	0.3
Federal	—	—	—	—	—	—	13	1,795	0.2
Manitoba									
Public	8	2,418	2.4	1	143	0.1	94	8,923	8.9
Private	—	—	—	—	—	—	1	50	0.1
Federal	—	—	—	—	—	—	17	692	0.7
Saskatchewan									
Public	4	1,803	2.0	1	128	0.1	146	9,539	10.5
Private	—	—	—	—	—	—	—	—	—
Federal	—	—	—	—	—	—	3	113	0.1
Alberta									
Public	9	4,868	2.9	1	55	—	156	18,940	11.3
Private	—	—	—	—	—	—	—	—	—
Federal	—	—	—	—	—	—	8	916	0.5
British Columbia									
Public	7	6,325	2.7	2	148	0.1	125	20,647	8.9
Private	1	70	—	—	—	—	3	86	—
Federal	—	—	—	—	—	—	3	1,516	0.7
Yukon Territory									
Federal	—	—	—	—	—	—	6	156	7.8
Northwest Territories									
Public	—	—	—	—	—	—	6	221	5.8
Private	—	—	—	—	—	—	1	13	0.3
Federal	—	—	—	—	—	—	39	265	7.0
Canada									
Public	112	55,453	2.5	20	2,327	0.1	1,181	199,714	9.0
Private	13	1,013	0.1	—	—	—	129	5,314	0.2
Federal	—	—	—	—	—	—	101	7,622	0.3

¹Based on estimated population as at Jan. 1, 1973.

5.5 Movement of patients¹ and patient-days in operating public, private and federal hospitals, 1970 and 1971

Type of service and item	1970	1971	Type of service and item	1970	1971
PUBLIC HOSPITALS			Av. daily no. of patients	19,395.3	19,971.6
General			Per 1,000 population	0.9	0.9
Beds set up at Dec. 31	113,440	115,220	Percentage occupancy ²	87.3	89.1
Admissions	3,250,591	3,366,529	Mental		
Per 1,000 population	152.1	156.1	Beds set up at Dec. 31	58,990	57,266
Patient-days	32,962,756	33,617,700	Admissions	56,848	51,596
Per 1,000 population	1,542.0	1,528.2	Per 1,000 population	2.7	2.4
Av. daily no. of patients	90,308.9	92,103.3	Patient-days	20,112,599	19,253,011
Per 1,000 population	4.2	4.3	Per 1,000 population	940.9	892.6
Percentage occupancy ²	79.6	79.9	Av. daily no. of patients	55,103.0	52,748.0
Allied special			Per 1,000 population	2.6	2.4
Beds set up at Dec. 31	21,692	22,408	Percentage occupancy ²	93.0	92.1
Admissions	179,450	189,169	Tuberculosis		
Per 1,000 population	8.4	8.8	Beds set up at Dec. 31	3,091	2,587
Patient-days	7,079,302	7,289,624	Admissions	6,000	5,265
Per 1,000 population	331.2	338.0	Per 1,000 population	0.3	0.2

5.5 Movement of patients¹ and patient-days in operating public, private and federal hospitals, 1970 and 1971 (concluded)

Type of service and item	1970	1971	Type of service and item	1970	1971
Patient-days	680,198	538,939	Admissions	3,527	4,003
Per 1,000 population	31.8	25.0	Per 1,000 population	0.2	0.2
Av. daily no. of patients	1,863.6	1,476.5	Patient-days	336,736	335,139
Per 1,000 population	0.1	0.1	Per 1,000 population	15.8	15.5
Percentage occupancy ²	55.8	57.1	Av. daily no. of patients	922.6	918.2
			Per 1,000 population	--	--
PRIVATE HOSPITALS			Percentage occupancy ²	98.6	97.2
General					
Beds set up at Dec. 31	982	606	FEDERAL HOSPITALS		
Admissions	25,607	20,564	General		
Per 1,000 population	1.2	1.0	Beds set up at Dec. 31	6,426	6,236
Patient-days	278,861	195,577	Admissions	61,824	60,896
Per 1,000 population	13.0	9.07	Per 1,000 population	2.9	2.8
Av. daily no. of patients	764.0	535.8	Patient-days	1,754,825	1,689,559
Per 1,000 population	--	--	Per 1,000 population	82.1	78.3
Percentage occupancy ²	80.7	88.4	Av. daily no. of patients	4,807.7	4,628.9
Allied special			Per 1,000 population	0.2	0.2
Beds set up at Dec. 31	4,196	4,295	Percentage occupancy ²	74.2	74.2
Admissions	14,140	14,237			
Per 1,000 population	0.7	0.7	Allied special		
Patient-days	1,405,072	1,474,796	Beds set up at Dec. 31	1,324	1,383
Per 1,000 population	65.7	68.4	Admissions	3,441	3,812
Av. daily no. of patients	3,849.5	4,040.5	Per 1,000 population	0.2	0.2
Per 1,000 population	0.2	0.2	Patient-days	257,657	348,527
Percentage occupancy ²	91.1	94.3	Per 1,000 population	16.7	16.2
Mental			Av. daily no. of patients	979.9	954.9
Beds set up at Dec. 31	955	945	Per 1,000 population	--	--
			Percentage occupancy ²	74.9	69.0

¹Patients refer to adults and children. All ratios are based on population estimates as at June 1 of the year concerned.

²Based on rated bed capacity.

5.6 Average length of stay of adults and children in public general and allied special hospitals, by province, 1971 (days)

Type of hospital	Nfld.	PEI	NS	NB	Que.	Ont.	Man.	Sask.	Alta.	BC	Canada ¹
General											
Non-teaching with no long-term units											
1- 24 beds	5.36	7.37	7.99	9.12	6.63	7.37	7.19	7.01	7.97	6.79	7.09
25- 49 "	6.58	8.55	8.55	7.97	7.97	8.07	7.58	6.92	6.83	7.29	7.31
50- 99 "	7.93	7.51	9.12	7.96	8.38	8.54	6.97	7.98	7.52	7.94	8.03
100-199 "	9.67	9.53	10.65	9.54	8.51	8.94	7.92	8.99	7.71	7.89	8.80
200+ "	9.35	10.42	10.49	10.45	10.32	8.83	9.02	12.11	8.69	7.91	9.31
Non-teaching with long-term units											
1- 99 beds	—	—	—	—	13.08	11.32	8.76	—	11.21	8.36	10.90
100-199 "	—	8.23	—	—	11.68	9.60	9.83	—	—	10.26	9.93
200+ "	—	—	—	10.76	13.51	11.16	—	12.50	—	10.76	11.30
Total, non-teaching	7.78	8.92	9.82	9.30	9.64	9.76	7.91	7.89	7.58	8.67	9.14
Teaching, full											
1-499 beds	19.73	—	11.40	—	12.08	10.06	—	—	—	—	11.81
500+ "	—	—	14.21	—	12.91	11.79	10.81	13.23	10.02	11.03	11.74
Teaching, partial											
1-499 beds	11.41	—	—	10.98	10.54	11.06	8.94	10.58	—	9.39	10.44
500+ "	—	—	—	17.71	12.28	9.76	—	10.71	11.03	10.53	11.07
Total, general	9.51	8.92	10.62	10.32	10.75	10.25	8.76	8.97	8.83	9.28	9.94
Children's	11.02	—	8.21	—	8.29	8.66	8.20	—	7.29	5.95	8.47
Convalescent/rehabilitation	46.38	28.48	32.11	39.46	48.04	36.22	39.00	—	42.39	42.96	41.45
Chronic/extended care	234.11	—	—	184.72	236.06	240.45	125.74	—	267.89	448.82	234.93
Other	4.93	—	6.89	—	12.78	10.04	—	140.70	7.60	7.58	13.27
All public general and allied special hospitals	9.97	9.15	10.51	10.65	12.90	11.54	10.40	9.74	11.12	9.99	11.34

¹Includes the Yukon Territory and Northwest Territories.

5.7 Full-time personnel employed in operating public, private and federal hospitals, by province, 1971

Province or territory	General ¹		General and allied special ¹		Mental		Tuberculosis	
	Number	Per 100 rated beds	Number	Per 100 rated beds	Number	Per 100 rated beds	Number	Per 100 rated beds
Newfoundland	5,429	218.4	6,092	203.3	714	100.4	—	—
Prince Edward Island	1,158	160.6	1,202	160.1	342	118.8	25	208.7
Nova Scotia	9,058	187.0	10,090	187.8	1,421	113.0	433	274.6
New Brunswick	8,408	187.8	8,550	186.6	1,175	87.8	—	—
Quebec	63,025	222.2	79,179	193.0	14,091	101.6	793	158.1
Ontario	87,866	200.3	98,720	189.9	18,894	131.2	614	191.8
Manitoba	11,159	191.2	13,336	187.3	2,195	84.7	135	204.5
Saskatchewan	9,801	144.5	10,362	140.8	1,404	66.4	244	162.3
Alberta	19,596	166.9	22,512	150.8	3,789	90.9	175	532.0 ^a
British Columbia	20,724	159.7	22,243	153.7	4,109	78.4	173	128.8
Yukon Territory	157	115.4	177	110.6	—	—	—	—
Northwest Territories	335	109.8	438	99.8	—	—	—	—
Canada	236,716	193.2	272,901	180.5	48,134	104.7	2,592	188.5

¹Excludes paid medical staff.

^aIncludes personnel employed in provision of general services to Alberta School Hospital.

5.8 Revenue and expenditure of operating public general hospitals, by province, 1970 and 1971

Year and province or territory	Operating hospitals	Total revenue \$'000	Expenditure				Total \$'000
			Gross salaries and wages ¹ %	Medical and surgical supplies %	Drugs %	Supplies and other expenses %	
1970							
Newfoundland	33	34,684	61.2	3.4	4.6	30.8	37,191
Prince Edward Island	8	7,542	66.2	3.2	3.3	27.3	7,695
Nova Scotia	43	65,674	62.7	3.4	3.2	30.7	66,631
New Brunswick	37	52,712	66.3	3.9	3.2	26.6	53,811
Quebec	131	500,723	74.4	3.2	3.2	19.2	547,044
Ontario	186	758,336	69.4	3.1	2.9	24.6	765,221
Manitoba	78	76,072	67.3	3.6	3.7	25.3	76,652
Saskatchewan	132	83,428	66.7	3.2	3.6	26.5	86,409
Alberta	116	141,556	68.5	3.0	3.2	25.3	146,983
British Columbia	88	173,506	73.6	3.6	3.1	19.7	180,548
Yukon Territory	1	—	—	—	—	—	—
Northwest Territories	6	1,530	60.4	2.2	2.5	34.9	1,750
Canada	859	1,895,763	70.4	3.3	3.1	23.2	1,969,935
1971							
Newfoundland	33	39,342	62.0	3.6	4.0	30.3	41,920
Prince Edward Island	8	8,398	66.1	3.4	3.2	27.4	8,615
Nova Scotia	43	73,702	63.1	3.7	3.1	30.0	74,465
New Brunswick	37	65,153	67.5	3.7	2.8	26.1	66,458
Quebec	128	566,020	73.4	3.4	3.1	20.2	603,357
Ontario	187	853,118	69.1	3.2	2.7	24.9	860,013
Manitoba	80	89,329	66.5	3.6	3.5	26.3	89,312
Saskatchewan	133	89,671	66.4	3.3	3.4	26.8	92,617
Alberta	116	158,476	68.7	3.1	3.1	25.1	164,240
British Columbia	88	193,282	73.9	3.5	3.0	19.5	201,640
Yukon Territory	—	—	—	—	—	—	—
Northwest Territories	6	1,813	60.4	3.8	3.1	32.7	1,997
Canada	859	2,138,304	70.1	3.3	3.0	23.6	2,204,634

¹Includes medical staff remuneration.

5.9 Patient-day revenue¹ and expenditure ratios of operating public hospitals, by province and type of hospital, 1971 (dollars)

Province and type of hospital	Revenue		Expenditure				
	Net in-patient earnings	Total	Gross salaries and wages ^a	Medical and surgical supplies	Drugs	Supplies and other expenses	Total
NEWFOUNDLAND							
General	46.15	55.88	36.93	2.17	2.40	18.05	59.55
Allied special							
Children's	50.49	58.39	37.33	2.43	1.56	20.22	61.54
Convalescent/rehabilitation	38.61	45.05	32.72	0.56	0.29	13.16	46.73
Chronic/extended care	11.84	12.61	11.44	0.09	0.17	3.01	14.71
PRINCE EDWARD ISLAND							
General	36.98	43.22	29.29	1.49	1.43	12.13	44.34
Allied special							
Convalescent/rehabilitation	33.88	39.42	30.93	0.30	0.37	7.82	39.42
Mental	11.54	11.70	11.51	0.12	0.33	1.70	13.66
Tuberculosis	34.95	34.95	26.94	0.45	1.16	10.15	38.70

5.9 Patient-day revenue¹ and expenditure ratios of operating public hospitals, by province and type of hospital, 1971 (dollars) (continued)

Province and type of hospital	Revenue		Expenditure				
	Net in-patient earnings	Total	Gross salaries and wages ²	Medical and surgical supplies	Drugs	Supplies and other expenses	Total
NOVA SCOTIA							
General	48.38	58.77	37.53	2.17	1.85	17.84	59.38
Allied special							
Children's	80.62	92.79	57.16	3.22	1.84	33.48	95.72
Convalescent/rehabilitation	32.69	41.01	26.94	0.75	0.77	12.24	40.70
Other	72.05	76.41	50.33	1.87	1.56	23.06	76.83
Mental	23.32	26.92	19.02	0.11	0.33	2.73	22.19
Tuberculosis	47.81	47.81	42.11	0.63	0.61	9.85	53.20
NEW BRUNSWICK							
General	47.19	54.62	37.62	2.04	1.54	14.52	55.71
Allied special							
Convalescent/rehabilitation	41.06	45.39	33.79	0.52	0.44	11.57	46.31
Chronic/extended care	26.81	27.47	20.37	0.60	0.72	5.80	27.49
Mental	0.70	16.03	12.07	0.06	0.20	1.97	14.30
QUEBEC							
General	64.81	74.00	57.89	2.66	2.42	15.92	78.88
Allied special							
Children's	95.65	115.15	86.23	3.27	2.48	24.99	116.96
Convalescent/rehabilitation	32.30	36.12	27.22	0.45	0.50	10.14	38.31
Chronic/extended care	24.67	25.75	20.84	0.31	0.59	5.27	27.01
Other	76.29	84.01	65.32	2.35	2.00	18.02	87.70
Mental	18.94	20.03	14.95	0.06	0.50	2.20	17.71
Tuberculosis	33.04	33.04	26.23	0.25	1.20	7.44	35.12
ONTARIO							
General	59.48	67.56	47.14	2.16	1.87	16.94	68.11
Allied special							
Children's	99.80	123.43	85.55	3.28	4.99	37.08	130.89
Convalescent/rehabilitation	35.79	40.61	25.44	0.37	0.45	14.46	40.72
Chronic/extended care	27.99	28.95	21.16	0.35	0.52	6.72	28.76
Other	89.19	128.51	85.91	1.79	3.90	43.45	135.05
Mental	12.92	30.18	24.08	0.06	0.28	2.99	27.41
Tuberculosis	37.25	37.25	30.48	0.30	0.41	11.39	42.58
MANITOBA							
General	53.06	59.73	39.81	2.14	2.09	15.70	59.72
Allied special							
Children's	77.28	97.71	71.85	2.97	3.57	19.46	97.86
Convalescent/rehabilitation	39.78	49.16	30.80	0.74	0.67	16.94	49.16
Chronic/extended care	29.80	31.51	24.14	0.46	0.99	5.90	31.49
Mental	12.16	17.99	14.42	0.07	0.25	1.42	16.16
Tuberculosis	32.62	32.62	28.39	0.30	1.04	8.77	38.50
SASKATCHEWAN							
General	41.26	46.18	31.70	1.59	1.63	12.76	47.69
Allied special							
Other	28.55	34.89	26.45	0.93	0.41	7.86	35.64
Mental	0.49	12.88	12.31	0.07	0.19	0.78	13.35
Tuberculosis	24.59	24.59	25.38	0.22	0.66	7.41	33.67
ALBERTA							
General	47.42	53.31	37.97	1.69	1.70	13.89	55.25
Allied special							
Children's	42.29	48.59	38.74	0.94	0.82	7.96	48.46
Convalescent/rehabilitation	44.77	53.41	35.29	0.42	0.37	15.82	51.90
Chronic/extended care	17.47	18.34	12.61	0.19	0.35	6.11	19.25
Other	91.61	112.25	84.25	1.59	3.10	24.03	112.98
Mental	2.86	17.71	12.92	0.06	0.34	1.41	14.73
Tuberculosis	118.87	118.87	95.79	0.63	1.07	21.38	118.87
BRITISH COLUMBIA							
General	49.90	54.42	41.98	2.01	1.71	11.07	56.77
Allied special							
Children's	59.19	74.17	69.18	1.92	1.79	21.19	94.08
Convalescent/rehabilitation	29.68	34.89	28.03	0.26	0.26	7.99	36.55
Chronic/extended care	19.13	19.39	18.63	0.28	0.29	5.46	24.65
Other	56.17	97.89	75.53	1.47	2.53	21.13	100.66
Mental	18.97	18.97	13.91	0.10	0.60	1.66	16.27
Tuberculosis	40.61	40.61	28.51	0.18	3.02	9.41	41.12

5.9 Patient-day revenue¹ and expenditure ratios of operating public hospitals, by province and type of hospital, 1971 (dollars) (concluded)

Province and type of hospital	Revenue		Expenditure				
	Net in-patient earnings	Total	Gross salaries and wages ²	Medical and surgical supplies	Drugs	Supplies and other	Total ex-penses
NORTHWEST TERRITORIES							
General	40.05	40.05	31.65	2.00	1.61	17.15	52.41
CANADA							
General	56.00	63.60	45.98	2.17	1.95	15.46	65.58
Allied special							
Children's	87.38	105.96	75.88	3.06	3.12	27.95	110.01
Convalescent/rehabilitation	35.38	41.05	28.56	0.44	0.46	12.37	41.83
Chronic/extended care	24.41	25.40	19.51	0.31	0.53	5.91	26.26
Other	70.26	85.99	64.00	1.90	2.14	21.16	89.20
Mental	13.87	22.43	17.39	0.07	0.39	2.23	20.08
Tuberculosis	34.99	34.99	30.95	0.31	1.05	9.25	41.56

¹Adults and children.²Includes medical staff remuneration.

5.10 Hospital separations, separations and days per 100,000 population, and average days of stay, by diagnostic category, 1971¹

Diagnostic category ²	Separations	Separations per 100,000 population	Days per 100,000 population	Average days of stay
Infective and parasitic diseases	106,704	496	4,710	9.5
Neoplasms	196,164	912	16,240	17.8
Endocrine, nutritional, and metabolic diseases	71,527	332	6,019	18.1
Diseases of the blood and blood-forming organs	28,042	130	1,430	11.0
Mental disorders	131,231	610	11,000	18.0
Diseases of the nervous system and sense organs	147,733	687	12,917	18.8
Diseases of the circulatory system	344,994	1,603	37,820	23.6
Diseases of the respiratory system	503,424	2,340	16,369	7.0
Diseases of the digestive system	434,614	2,020	19,947	9.9
Diseases of the genito-urinary system	336,218	1,563	12,796	8.2
Complications of pregnancy, childbirth and the puerperium	505,788	4,703	26,134	5.6
Diseases of the skin and subcutaneous tissue	63,475	295	2,790	9.5
Diseases of the musculoskeletal system and connective tissue	143,897	669	10,371	15.5
Congenital anomalies	40,512	188	2,564	13.6
Symptoms and ill-defined conditions	117,000	544	3,740	6.9
Accidents, poisonings, and violence (nature of injury)	328,559	1,527	17,068	11.2
Supplementary classifications	69,005	321	2,767	8.6
All causes	3,568,887	16,587	191,610	11.6

¹Excludes newborn and data for the Yukon Territory and Northwest Territories.²Major groupings of the International Classification of Diseases, Adapted — 8th Revision. More detailed information is available in Statistics Canada publication *Hospital morbidity* (Cat. No. 82-206) and *Hospital morbidity — Canadian diagnostic list* (Cat. No. 82-209).

5.11 Hospital separations per 100,000 population, by diagnostic category and age group, 1971¹

Diagnostic category ²	Under 15	15-24	25-44	45-64	65+	Total
Infective and parasitic diseases	990	315	229	258	479	496
Neoplasms	118	275	814	1,818	3,495	912
Endocrine, nutritional, and metabolic diseases	173	148	230	554	1,147	332
Diseases of the blood and blood-forming organs	193	77	53	94	343	130
Mental disorders	106	588	920	986	676	610
Diseases of the nervous system and sense organs	736	315	445	812	1,818	687
Diseases of the circulatory system	59	166	871	3,164	9,231	1,603
Diseases of the respiratory system	4,730	1,267	847	1,317	3,039	2,340
Diseases of the digestive system	930	1,513	2,096	3,248	4,105	2,020
Diseases of the genito-urinary system	503	1,122	2,267	2,311	2,546	1,563
Complications of pregnancy, childbirth and the puerperium	27	12,240	9,786	65	—	4,703
Diseases of the skin and subcutaneous tissue	306	326	251	270	376	295
Diseases of the musculoskeletal system and connective tissue	168	424	762	1,256	1,421	669
Congenital anomalies	412	141	93	70	47	188
Symptoms and ill-defined conditions	486	411	495	657	951	544
Accidents, poisonings, and violence (nature of injury)	1,235	1,811	1,389	1,442	2,570	1,527
Supplementary classifications	51	173	857	177	320	321
All causes	11,209	15,153	17,450	18,467	32,565	16,587

¹Excludes newborn and data for the Yukon Territory and Northwest Territories.²See footnote to Table 5.10.

5.12 Separated cases and operations in general and allied special hospitals, by age group, 1971¹

Item		Under 15	15-24	25-44	45-64	65+	Total
All separated cases							
Cases	No.	714,109	606,465	940,536	741,143	566,634	3,568,887
Days in hospital	"	4,831,076	4,003,704	7,727,290	10,252,223	14,414,020	41,228,313
Av. days per case	"	6.8	6.6	8.2	13.8	25.4	11.6
Separated cases undergoing surgery							
Cases (primary operations)	No.	299,945	339,388	571,040	372,804	187,680	1,770,857
Days in hospital	"	1,526,851	2,160,532	4,446,075	4,574,093	3,608,402	16,315,953
Av. days per case	"	5.1	6.4	7.8	12.3	19.2	9.2
Rate per 100,000 population							
All separated cases		11,209	15,153	17,450	18,467	32,565	16,587
All operated cases		4,708	8,480	10,594	9,289	10,786	8,230
Days of all separated cases		75,829	100,033	143,364	255,450	828,392	191,610
Days of all operated cases		23,966	53,981	82,488	113,971	207,379	75,829
Population ²		6,371,000	4,002,400	5,390,000	4,013,400	1,740,000	21,516,800

¹Excludes newborn and data for the Yukon Territory and Northwest Territories.

²Estimate of June 1, 1971, exclusive of the Yukon Territory and Northwest Territories.

5.13 Primary operations in general and allied special hospitals, by age group and by sex, 1971¹

Operation		Under 15	15-24	25-44	45-64	65+	Total
Neurosurgery	M	1,574	1,132	2,666	3,737	1,415	10,524
	F	1,088	694	2,128	2,912	1,067	7,889
Ophthalmology	M	7,505	2,100	2,910	5,685	7,836	26,036
	F	6,589	1,702	2,377	5,672	11,224	27,564
Otorhinolaryngology	M	74,603	17,755	15,550	8,030	2,271	118,209
	F	69,995	22,310	13,779	6,556	1,614	114,254
Thyroid, parathyroid and adrenals	M	274	187	386	408	120	1,375
	F	304	502	1,641	1,787	409	4,643
Vascular and cardiac surgery	M	1,801	962	4,042	10,566	4,429	21,800
	F	1,620	1,106	10,984	10,760	3,155	27,625
Thoracic surgery	M	430	674	954	2,128	1,467	5,653
	F	320	278	637	1,113	802	3,150
Abdominal surgery	M	22,320	13,127	26,947	39,652	20,428	122,474
	F	11,649	18,738	36,577	37,758	17,440	122,162
Proctological surgery	M	669	4,014	10,438	7,681	2,253	25,055
	F	466	3,475	6,874	5,522	1,922	18,259
Urological surgery	M	15,607	4,611	11,007	17,316	24,211	72,752
	F	3,420	1,608	4,589	5,683	3,318	18,618
Breast surgery	M	99	218	178	241	202	938
	F	93	2,263	7,165	7,373	2,501	19,395
Gynecological surgery	F	706	26,797	148,513	58,086	8,818	242,920
Obstetrical procedures	F	561	131,101	134,187	789	—	266,638
Orthopedic surgery	M	17,462	22,786	29,818	23,126	8,476	101,668
	F	12,657	11,066	16,561	23,154	17,038	80,476
Plastic surgery	M	9,447	8,499	8,274	6,568	3,186	35,974
	F	7,417	5,849	7,474	6,430	3,450	30,620
Oral and maxillofacial surgery	M	1,262	1,718	1,951	1,215	469	6,615
	F	916	999	1,188	940	387	4,430
Dental surgery	M	5,713	6,506	6,162	3,795	913	23,089
	F	6,343	8,693	7,393	3,880	879	27,188
Biopsy	M	921	817	2,030	4,651	4,090	12,509
	F	672	1,853	5,728	6,057	2,918	17,228
Diagnostic endoscopy	M	2,811	1,388	4,718	10,140	8,850	27,907
	F	3,179	2,477	6,211	6,893	5,078	23,838
Diagnostic radiography	M	2,198	1,843	5,646	8,970	4,348	23,005
	F	2,475	2,700	5,695	6,352	3,298	20,520
Radiotherapy and related therapies	M	97	87	192	526	451	1,353
	F	75	40	590	1,450	777	2,932
Physical medicine and rehabilitation	M	1,387	627	1,268	2,054	1,849	7,185
	F	1,073	682	1,303	2,093	2,337	7,488
Other non-surgical procedures	M	1,209	2,584	7,733	9,900	1,195	22,621
	F	919	2,816	6,574	5,154	789	16,252
Other surgical and non-surgical procedures	M	7	—	1	—	—	8
	F	12	4	1	1	—	18
All operations	M	167,396	91,635	142,871	166,389	98,459	666,750
	F	132,549	247,753	428,169	206,415	89,221	1,104,107
	T	299,945	339,388	571,040	372,804	187,680	1,770,857

¹Excludes newborn and data for the Yukon Territory and Northwest Territories.

5.14 Reported cases of selected notifiable diseases and rate per 100,000 population, by province, 1972

International List No.	Disease	Nfld.	PEI	NS	NB	Que.	Ont.	Man.	Sask.	Alta.	BC	YT	NWT	Canada
<i>Number of cases</i>														
009.1	Diarrhoea of the newborn, epidemic	—	25	—	—	22	1	1	—	5	—	—	2	55
032	Diphtheria	—	—	—	—	—	3	5	—	48	11	—	1	68
004	Dysentery, bacillary	151	—	—	6	113	316	134	134	202	202	—	93	1,290
062.1	Encephalitis, western equine	—	1	—	—	—	1	1	—	—	7	—	—	8
—	Food poisoning, bacterial	—	1	—	—	19	—	53	248	4	21	—	—	346
005.0	Staphylococcal	—	1	—	—	17	1	53	248	4	16	—	—	339
005.1	Botulism	—	—	—	—	2	—	—	—	—	5	—	—	7
—	Hepatitis, infectious (including serum hepatitis)	330	500	221	144	143	1,976	830	507	1,099	1,920	19	122	7,811
070	Hepatitis, infectious	330	500	217	144	106	1,689	788	497	1,040	1,894	17	122	7,344
999.2	Hepatitis, serum	—	1	4	—	37	287	42	10	59	26	2	—	467
055	Measles	406	—	214	1	1,224	899	63	62	146	97	2	22	3,136
—	Meningitis, aseptic, due to enteroviruses	—	6	7	3	92	1	55	4	—	22	1	6	196
045.0	Coxsackie virus	—	1	2	1	35	1	1	—	—	—	—	—	40
045.1	ECHO virus	—	1	—	—	5	1	1	—	—	—	—	—	6
045.9	Not specified	—	5	5	2	52	1	53	4	—	22	1	6	150
036	Meningococcal infections	45	2	13	8	67	92	63	17	16	34	—	4	361
056	Rubella (German measles)	82	1	67	—	724	675	115	80	948	84	3	30	2,808
—	Salmonella infections, other	60	20	68	45	975	1,140	112	264	436	417	2	9	3,548
003.0	With food as vehicle	—	16	38	11	661	1	3	5	62	—	—	—	796
003.9	Without mention of food as vehicle	60	4	30	34	314	1,140	109	259	374	417	2	9	2,752
034	Streptococcal sore throat and scarlet fever	95	2,866	1,749	12	488	1,200	611	681	3,855	454	6	207	12,224
010.011, 012-019	Tuberculosis	187	5	122	81	1,195	1,052	203	170	342	502	1	49	3,909
001	Typhoid and paratyphoid fever	1	—	1	6	43	69	14	—	2	13	—	6	155
002	Typhoid	1	—	—	6	27	40	12	—	2	8	—	6	102
—	Paratyphoid	—	—	1	—	16	29	2	—	—	—	—	—	53
098	Veneral diseases	343	47	977	399	4,402	15,087	3,646	3,327	5,985	8,310	274	1,739	44,536
090-097	Gonococcal infections	342	42	865	381	3,953	13,476	3,467	3,162	5,842	7,938	273	1,726	41,467
—	Syphilis	1	5	112	18	448	1,609	179	164	143	371	1	13	3,064
099.0, 099.1, 099.2	Other	—	1	—	—	1	2	—	1	—	1	—	—	5
033	Whooping cough	24	51	26	55	451	345	85	52	105	102	—	1	1,297

5.14 Reported cases of selected notifiable diseases and rate per 100,000 population, by province, 1972 (concluded)

International List No.	Disease	Nfld.	PEI	NS	NB	Que.	Ont.	Man.	Sask.	Alta.	BC	YT	NWT	Canada
Rate per 100,000 population														
009.1	Diarrhoea of the newborn, epidemic	—	22.1	—	—	0.4	1	0.1	—	0.3	—	—	5.6	0.4
032	Diphtheria	—	—	—	—	—	—	0.5	—	2.9	0.5	—	—	0.3
004	Dysentery, bacillary	28.4	—	—	0.9	1.9	4.0	13.5	14.6	8.5	9.0	—	258.3	5.9
062.1	Encephalitis, western equine	—	1	—	—	—	—	0.1	—	—	0.3	—	—	0.1
005.0	Food poisoning, bacterial	—	0.9	—	—	0.3	—	5.3	27.1	0.2	0.9	—	—	1.6
	Staphylococcal	—	0.9	—	—	0.3	1	5.3	27.1	0.2	0.7	—	—	2.4
005.1	Botulism	—	—	—	—	—	—	—	—	—	0.2	—	—	—
070	Hepatitis, infectious (including serum hepatitis)	62.0	442.5	27.8	22.4	2.4	25.2	83.7	55.3	66.4	85.4	100.5	338.9	35.8
	Hepatitis, infectious	62.0	442.5	27.3	22.4	1.8	21.6	79.5	34.2	62.9	84.3	89.9	338.9	33.6
999.2	Hepatitis, serum	—	1	0.5	—	0.6	3.7	4.2	1.1	3.6	1.2	10.6	—	2.1
055	Measles	76.3	—	26.9	0.2	20.2	11.5	6.4	6.8	8.8	4.3	10.6	61.1	14.4
045.0	Meningitis, aseptic, due to enteroviruses	—	5.3	0.9	0.5	1.5	1	5.5	0.4	—	1.0	5.3	16.7	1.4
	Coxsackie virus	—	0.9	0.3	0.2	0.6	1	0.1	—	—	—	—	—	0.3
045.1	ECHO virus	—	1	—	—	0.1	1	0.1	—	—	—	—	—	—
045.9	Not specified	—	4.4	0.6	0.3	0.9	1	5.3	0.4	—	1.0	5.3	16.7	1.1
036	Meningococcal infections	8.5	1.8	1.6	1.2	1.1	1.2	6.4	1.9	1.0	1.5	—	11.1	1.7
056	Rubella (German measles)	15.4	1	8.4	—	12.0	8.6	11.6	8.7	57.3	3.7	15.9	83.3	12.9
003.0	Salmonella infections, other	11.3	17.7	8.6	7.0	16.1	14.6	11.3	28.8	26.4	18.6	10.6	25.0	16.3
	With food as vehicle	—	14.2	4.8	1.7	10.9	1	0.3	0.5	3.7	—	—	—	5.7
003.9	Without mention of food as vehicle	11.3	3.5	3.8	5.3	5.2	14.6	11.0	28.3	22.6	18.6	10.6	25.0	12.6
034	Streptococcal sore throat and scarlet fever	17.9	2,536.3	220.1	1.9	8.1	15.3	61.6	74.3	233.1	20.2	31.7	575.0	56.0
010.011,	Tuberculosis	35.2	4.4	15.4	12.6	19.8	13.4	20.5	18.5	20.7	22.3	5.3	136.1	17.9
012-019		0.2	—	0.1	0.9	0.7	0.9	1.4	—	0.1	0.6	—	16.7	0.7
001	Typhoid and paratyphoid fever	0.2	—	—	0.9	0.4	0.5	1.2	—	0.1	0.4	—	16.7	0.5
002	Paratyphoid	—	—	0.1	—	0.3	0.4	0.2	—	—	0.2	—	—	0.2
098	Veneral diseases	64.5	41.6	123.0	62.1	72.8	192.6	367.7	362.9	361.9	369.8	1,449.7	4,830.6	204.0
	Gonococcal infections	64.3	37.2	108.9	59.3	65.3	172.0	349.7	344.9	353.2	353.2	1,444.4	4,794.4	189.9
090-097	Syphilis	0.2	4.4	14.1	2.8	7.4	20.5	18.1	17.9	8.6	16.5	5.3	36.1	14.0
099.0, 099.1,	Other	—	1	—	—	—	—	—	0.1	—	—	—	—	—
099.2		—	—	—	—	—	—	—	—	—	—	—	—	—
033	Whooping cough	4.5	45.1	3.3	8.6	7.5	4.4	8.6	5.7	6.3	4.5	—	2.8	5.9

^aNot reportable.

5.15 Malignant neoplasms and rate per 100,000 population, 1971

Province or territory of residence	Number of cases			Rate per 100,000 population		
	New primary sites	Deaths ¹	Hospital morbidity separations	New primary sites	Deaths	Hospital morbidity separations
Newfoundland	1,104	598	2,054	211.5	114.5	393.4
Prince Edward Island	326	179	501	292.1	160.3	448.9
Nova Scotia	2,174	1,250	4,980	275.5	158.4	631.1
New Brunswick	1,963	897	2,809	309.3	141.4	442.6
Quebec	16,309	8,878	26,413	270.6	147.3	438.1
Ontario	..	10,952	45,595	..	142.2	591.9
Manitoba	3,427	1,597	6,344	346.8	161.6	641.9
Saskatchewan	3,573	1,363	5,938	385.8	147.2	632.7
Alberta	4,119	1,928	10,067	253.0	118.4	618.4
British Columbia	10,751	3,362	14,254	492.1	153.9	652.4
Yukon Territory	45	10	—	244.6	54.4	—
Northwest Territories	122	22	—	350.6	63.2	—
Canada	43,913	31,036	188,955	316.7	143.9	552.6

¹Includes only the deaths where underlying cause was stated to be due to malignant neoplasms.

5.16 Summary statistics on the incidence of tuberculosis, 1972

Province or territory, age group and origin	Notifications		Patients under treatment at Dec. 31			Persons receiving preventive out-patient drug treatment Dec. 31	Deaths
	New active cases	React- ivated cases	In- patients	Out- patients on drug treatment	Total		
PROVINCE OR TERRITORY	Number						
Newfoundland	187	28	76	343	419	74	10
Prince Edward Island	5	1	7	18	25	28	1
Nova Scotia	122	22	87	284	371	237	9
New Brunswick	81	7	27	278	305	174	7
Quebec	1,195	152	550	2,079	2,629	2,368	240
Ontario	1,052	191	360	2,067	2,427	5,719	84
Manitoba	203	30	57	523	580	928	23
Saskatchewan	170	17	63	243	306	199	19
Alberta	342	37	152	589	741	860	14
British Columbia	502	65	120	893	1,013	994	40
Yukon Territory	1	1	1	15	16	46	—
Northwest Territories	49	19	24	163	187	1,238	6
Canada	3,909	570	1,524	7,495	9,019	12,865	453
	Rate per 100,000 population						
Newfoundland	35.2	5.3	14.2	63.9	78.0	13.8	1.9
Prince Edward Island	4.4	0.9	6.1	15.8	21.9	24.6	0.9
Nova Scotia	15.4	2.8	10.8	35.4	46.3	29.6	1.1
New Brunswick	12.6	1.1	4.2	42.9	47.1	26.9	1.1
Quebec	19.8	2.5	9.1	34.3	43.3	39.0	4.0
Ontario	13.4	2.4	4.6	26.2	30.7	72.5	1.1
Manitoba	20.5	3.0	5.7	52.7	58.4	93.5	2.3
Saskatchewan	18.6	1.9	6.9	26.7	33.6	21.9	2.1
Alberta	20.7	2.2	9.1	35.2	44.3	51.5	0.8
British Columbia	22.3	2.9	5.2	39.0	44.2	43.4	1.8
Yukon Territory	5.3	5.3	5.0	75.0	80.0	230.0	—
Northwest Territories	136.1	52.8	64.9	440.5	505.4	3,345.9	16.7
Canada	17.9	2.6	6.9	34.1	41.0	58.5	2.1
AGE GROUP	Number						
0-14	445	3	118	640	758	2,286	4
15-24	505	28	100	848	948	2,797	5
25-44	1,151	66	320	2,292	2,612	3,600	31
45-64	1,130	222	558	2,456	3,014	3,144	168
65 and over	678	251	428	1,259	1,687	1,038	245
Total	3,909	570	1,524	7,495	9,019	12,865	453
	Rate per 100,000 population						
0-14	7.1	—	1.9	10.1	12.0	36.1	—
15-24	12.3	0.7	2.4	20.4	22.9	67.5	—
25-44	10.3	1.2	5.7	41.2	46.9	64.6	—
45-64	28.4	5.4	13.5	59.5	73.0	76.1	—
65 and over	68.7	14.0	23.8	69.9	93.7	57.7	—
Total	17.9	2.6	6.9	34.1	41.0	58.5	—
ORIGIN ¹	Number						
Indian	494	79	227	882	1,109	1,074	—
Eskimo	50	20	25	164	189	991	—
Other	3,365	471	1,272	6,449	7,721	10,800	—
Total	3,909	570	1,524	7,495	9,019	12,865	—

5.16 Summary statistics on the incidence of tuberculosis, 1972 (concluded)

Province or territory, age group and origin	Notifications		Patients under treatment at Dec. 31			Persons receiving preventive out-patient drug treatment Dec. 31	Deaths
	New active cases	React- ivated cases	In- patients	Out- patients on drug treatment	Total		
<i>Percentage distribution</i>							
Indian	13	14	15	12	12	8	..
Eskimo	1	3	2	2	2	8	..
Other	86	83	83	86	86	84	..
Total	100	100	100	100	100	100	..

¹This classification is shown to point up the high incidence of tuberculosis among the native population; Indians constituted 1.1% of the total population in 1961 and Eskimos 0.1%.

5.17 Therapeutic abortions performed on residents of Canada and rate per 100 live births, by province and by quarter, 1971 and 1972

Province or territory	1971					1972				
	Jan.- Mar.	Apr.- June	July- Sept.	Oct.- Dec.	Total	Jan.- Mar.	Apr.- June	July- Sept.	Oct.- Dec.	Total
<i>Number</i>										
Newfoundland	13	17	13	35	78	42	35	23	33	133
Prince Edward Island	4	11	10	14	39	18	9	9	9	45
Nova Scotia	135	141	161	206	643	186	204	201	246	837
New Brunswick	27	26	39	54	146	53	33	43	54	183
Quebec	427	428	423	603	1,881	639	715	737	756	2,847
Ontario	3,294	3,973	4,151	4,755	16,173	4,953	4,899	5,113	5,307	20,272
Manitoba	161	181	195	290	827	294	289	291	304	1,178
Saskatchewan	143	171	216	226	756	233	281	233	296	1,043
Alberta	762	735	781	838	3,116	873	949	955	1,110	3,887
British Columbia	1,698	1,717	1,762	1,868	7,045	1,972	2,001	2,113	2,093	8,179
Yukon Territory	1	5	2	—	8	11	13	13	11	48
Northwest Territories	..	..	..	..	..	11	8	16	9	44
Canada ¹	6,707	7,461	7,804	8,951	30,923	9,322	9,474	9,794	10,263	38,853
<i>Rate per 100 live births</i>										
Newfoundland	0.4	0.5	0.4	1.1	0.6	1.3	1.1	0.7	1.0	1.0
Prince Edward Island	0.8	1.9	1.9	2.8	1.9	3.4	1.8	1.8	1.8	2.2
Nova Scotia	3.8	3.8	4.4	6.2	4.5	5.4	5.9	5.9	7.5	6.2
New Brunswick	0.9	0.9	1.3	1.8	1.2	1.8	1.1	1.4	1.9	1.6
Quebec	1.8	1.8	1.9	3.1	2.1	3.0	3.2	3.5	4.0	3.4
Ontario	9.9	11.8	12.8	15.2	12.4	16.1	15.4	16.2	17.2	16.2
Manitoba	3.5	3.9	4.3	6.8	4.6	6.7	6.5	6.6	7.3	6.8
Saskatchewan	3.5	4.0	5.3	6.3	4.7	6.0	7.3	6.0	7.8	6.7
Alberta	9.7	9.3	10.2	11.9	10.2	12.0	12.8	12.7	15.5	13.3
British Columbia	18.6	20.0	20.3	22.0	20.2	23.2	22.8	23.8	25.0	23.7
Yukon Territory	0.8	3.6	1.5	—	1.6	11.7	11.4	9.6	10.3	10.6
Northwest Territories	..	..	..	..	..	3.1	2.4	5.7	3.2	3.6
Canada ¹	7.2	8.0	8.6	10.6	8.6	10.8	10.6	11.1	12.3	11.2

¹Includes 211 cases for 1971 and 157 cases for 1972 for which province of residence was not reported.

5.18 Psychiatric in-patient movement, by type of institution and sex, 1973

Type of institution	Reporting institutions	Admissions ¹		Separations ²		Patients on books, Dec. 31 ³	
		Male	Female	Male	Female	Male	Female
Public mental hospital	44	21,418	14,354	22,282	15,347	15,449	11,350
Institution for the mentally retarded	82	3,168	2,405	3,425	2,677	11,715	8,997
Public psychiatric unit	107	21,031	30,821	20,981	30,833	1,254	1,770
Federal psychiatric unit	8	1,229	54	1,256	52	852	14
Psychiatric hospital	13	7,781	6,804	7,777	6,801	829	843
Aged and senile home	6	296	247	351	334	790	1,015
Hospital for addicts	16	7,399	1,903	7,408	1,904	333	83
Treatment centre for emotionally disturbed children	44	1,078	610	1,083	655	1,023	505
Epilepsy hospital	2	137	133	133	136	153	67
All institutions	322	63,537	57,331	64,696	58,739	32,398	24,644

¹Includes first admissions, readmissions and transfers-in.

²Includes discharges, deaths and transfers-out.

³Includes in addition to patients actually in residence those absent on probationary leave, boarding in approved homes, or otherwise absent from the institutions but not officially separated.

5.19 Average annual salaries¹ of nursing personnel in public hospitals, by academic qualifications, employment category and type of hospital, 1972

Category	Average salary \$
ACADEMIC QUALIFICATIONS²	
Graduate nurse only	7,538
Clinical postgraduate training	8,207
University diploma — one year	8,443
Bachelor's degree in nursing	8,193
Master's degree in nursing	*
EMPLOYMENT CATEGORY⁴	
Director nursing education	10,681
Associate or assistant nursing director	10,575
Associate or assistant director nursing education	10,092
Nursing supervisor	9,939
Head nurse	9,192
Assistant head nurse	8,514
Teacher	8,775
General duty	
Registered	7,538
Not registered	6,665
TYPE OF PUBLIC HOSPITAL³	
General	7,538
Chronic/extended care	7,703
Mental	7,688
Tuberculosis	7,709
Other	7,772

¹Excludes shift differential pay.

²General-duty (registered) nurse — public general hospitals.

³Confidential — value represents fewer than three individuals.

⁴Graduate nurse without additional qualifications — public general hospitals.

*General-duty (registered) nurse without additional qualifications.

5.20 Registered nurses by employment status and province of employment or residence¹, 1972

Province or territory of employment or residence	Employment status			Not employed in nursing	Not stated	Total
	Full-time	Part-time	Full-time or part-time not stated			
Newfoundland	912	92	90	291	21	1,406
Prince Edward Island	417	134	86	96	8	741
Nova Scotia	3,500	622	369	695	91	5,277
New Brunswick	2,194	519	247	1,031	38	4,029
Quebec	19,975	4,569	2,560	4,667	2,691	34,462
Ontario	30,887	10,071	2,327	23,662	929	67,876
Manitoba	3,665	1,011	423	826	80	6,005
Saskatchewan	3,533	1,080	804	642	32	6,091
Alberta	6,608	1,814	653	2,502	77	11,654
British Columbia	7,964	2,217	1,130	2,473	278	14,062
Yukon Territory and Northwest Territories	246	27	23	103	3	402
Canada	79,901	22,156	8,712	36,988	4,248	152,005

¹Location of residence is used for those nurses who are not employed, or whose employment status is unknown.

5.21 Physiotherapists by employment status and province of employment or residence¹, 1972

Province of employment or residence	Employment status		Employed in other than physiotherapy	Not employed	Not stated	Total
	Employed in physiotherapy					
	Self employed	Salaried				
Newfoundland	—	27	—	3	—	30
Prince Edward Island	—	13	—	—	—	13
Nova Scotia	1	90	—	7	2	100
New Brunswick	—	43	—	2	—	45
Quebec	33	386	4	83	22	528
Ontario	70	1,284	11	147	91	1,603
Manitoba	9	143	2	19	—	173
Saskatchewan	6	82	—	11	3	102
Alberta	15	246	4	42	5	312
British Columbia	49	330	5	45	6	435
Not stated	22	23	—	—	—	45
Canada ^a	205	2,667	26	360	129	3,387

¹Location of residence is used for those physiotherapists who are not employed, or whose employment status is unknown.

²Includes the Yukon Territory and Northwest Territories.

5.22 Radiological technicians by employment status and province of employment or residence¹, 1971

Province or territory of employment or residence	Employment status		Not employed	Not stated	Total
	Medical or health field	Other than medical or health field			
Newfoundland	86	5	12	1	104
Prince Edward Island	14	1	5	—	20
Nova Scotia	208	6	35	8	257
New Brunswick	118	2	24	6	150
Quebec	1,261	27	158	43	1,489
Ontario	1,473	63	272	33	1,841
Manitoba	294	5	62	5	366
Saskatchewan	171	7	51	5	234
Alberta	419	13	121	14	567
British Columbia	438	14	111	8	571
Yukon Territory	2	1	—	—	3
Northwest Territories	4	—	4	—	8
Foreign	184	7	57	11	259
Not stated	7	1	—	1,070	1,078
Canada	4,679	152	912	1,204	6,947

¹Location of residence is used for those radiological technicians who are not employed, or whose employment status is unknown.

Sources

- 5.1 Health Economics and Statistics, Health Programs Branch, Department of National Health and Welfare.
 5.2 Public Finance Division, Institutional and Public Finance Statistics Branch, Statistics Canada.
 5.3 - 5.22 Health Division, Institutional and Public Finance Statistics Branch, Statistics Canada.

Chapter 6

Incomes and social security

This Chapter brings together material relating to the economic well-being of the Canadian people and their families. Summary statistics on the size and distribution of family incomes and expenditures are presented in Sections 6.1 and 6.2, federal and provincial social security programs are described in Sections 6.3 to 6.6 and veterans services in Section 6.7.

Income data in Section 6.1 are those obtained in recent sample Surveys of Consumer Finances now conducted annually by Statistics Canada. A wide range of income statistics for families and individuals is also available in the reports of the decennial 1971 Census of Canada, which are particularly useful for smaller geographical areas where annual sample surveys cannot provide reliable information at these levels. However, the income distributions of the Surveys of Consumer Finances at broad regional and provincial levels are shown in the tables of this Chapter since they are available for a later year (1971 data from the 1972 survey, rather than incomes for 1970 from the 1971 Census), and they can be compared with a number of earlier surveys for selected years over the past two decades. Information on consumer spending is obtained through household surveys of family expenditure, as described in Section 6.2. Their primary use is to provide the basis of weighting in the construction of the consumer price indexes. The reader is referred to Chapter 21 for details on this important economic indicator.

6.1 Family incomes

Statistics on the distributions of income are an essential measure of the extent to which families and individuals have command over goods and services in their daily lives and of their relative freedom from want. Income statistics have many research and policy uses. They have been used, for example, by the Senate Committee on Aging in evaluating the adequacy of incomes of the older population, by the Economic Council in delineating the nature and characteristics of the poor, and by the Senate Committee on Poverty. Different government departments require these statistics to determine the need for social welfare measures as well as to evaluate and study the effects of existing and proposed measures on income distributions. Manufacturers, marketing agencies and others in the private sector make extensive use of income data to assist in estimating and projecting the demand for many types of goods and services.

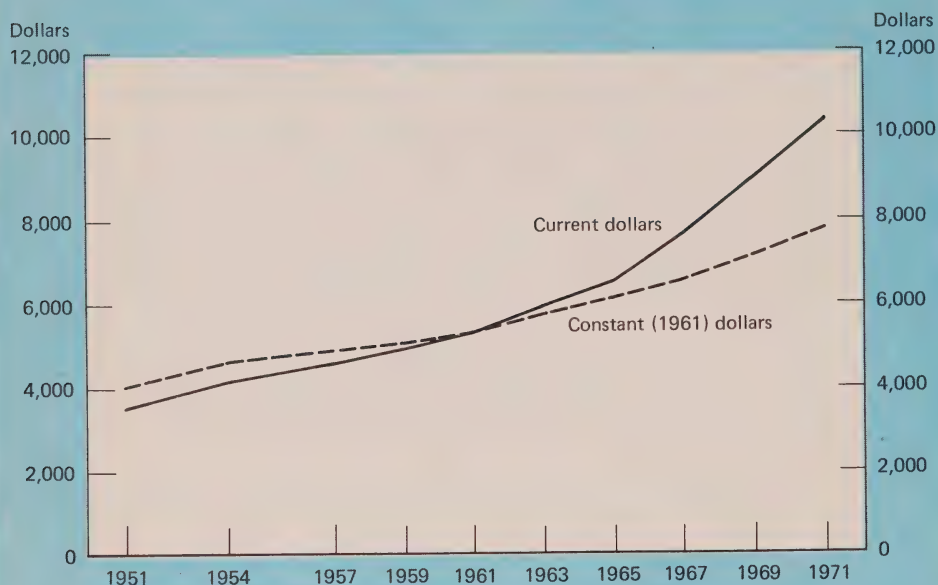
Because of the importance and need for statistics on income distributions, Statistics Canada conducted its first Survey of Consumer Finances in the spring of 1952. The survey was restricted to the non-farm population in the 10 provinces. Individuals in about 7,500 households were questioned on the size and source of their cash income in 1951. Following this initial experience the survey was conducted periodically, usually once every two years. The 1966 survey extended coverage to the farm population so that the survey sample became representative of practically all private households in Canada. The only continuing exceptions are the Yukon Territory and Northwest Territories and individuals living in institutional and collective dwellings such as military camps, hospitals and prisons. Since 1972, the Surveys of Consumer Finances have been conducted in the spring of each year. A more detailed description of the survey and classifications of income (including data for unattached individuals and for all income recipients individually), will be found in the annual report *Income distributions by size in Canada*, Statistics Canada Catalogue No. 13-207.

6.1.1 Family and income concepts

Due to the various meanings and interpretations that concepts such as “family”, “unattached individuals”, and “income” convey in different situations, these terms are defined here as they are employed in the annual Surveys of Consumer Finances.

Family. For the purposes of the survey, a family is defined as a group of individuals sharing a common dwelling unit and related by blood, marriage or adoption. This definition, often refer-

Change in average family income 1951 to 1971 in current and constant (1961) dollars



red to as the "economic family" concept, is somewhat broader than that employed by most demographic studies and the census where a family is restricted to a married couple with or without unmarried children or a parent with unmarried children. Under the survey definition all relatives in a household, regardless of the degree of relationship, constitute a family. This definition differs also from the "spending unit" concept of a family for the purposes of Family Expenditure Surveys described in Section 6.2.

Unattached individuals. The majority of people living in private dwellings are family members and the following income statistics describe the socio-economic position of these family groups. However, in 1971 an estimated 1.7 million individuals lived on their own or as roomers, boarders or employees in households where they were not related to anybody else; these persons are classified as unattached individuals and data on their incomes can be found in *Income distributions by size in Canada*, Catalogue No. 13-207.

Income. Survey estimates relate to money income received from all sources before payment of taxes and such deductions as pension contributions, insurance premiums, etc. This income may be composed of: wages and salaries of paid workers; net income of the self-employed (e.g. partners in unincorporated businesses, professional practitioners and farmers); investment income (e.g. interest, dividends, and rents); transfer payments (e.g. old age pensions, family allowances); and other money income (e.g. retirement pensions, alimony). Thus the concept of income is similar to personal income in the national accounts except that, first, it covers only private households in the 10 provinces and not the non-commercial institutions such as churches and charitable organizations and, second, the survey estimates do not include imputed income such as the value of farm products produced and consumed at the farm. On the other hand, the survey income concept is broader than the income defined for the calculation of income tax since it includes such non-taxable money income as the guaranteed income supplement, pensions to the blind, etc.

6.1.2 Income trends, 1951-71

It is generally agreed that the levels of living of Canadians have been continuously improving over the years. Economic indicators, such as the rising levels of real incomes since 1951, support this contention. Tables 6.1 to 6.3 provide family income comparisons for the 1951-71 period; although the survey coverage excluded farm population until 1965 comparability with later years is not seriously affected in these tables.

The first set of figures in Table 6.1 gives average incomes in terms of current dollars in selected years from 1951 to 1971 for families (as defined in Section 6.1.1). Average family income was \$3,535 in 1951. This average increased by about 50% in the 1951-61 period to \$5,317 in 1961 and by another 95% in the 1961-71 period to \$10,368 in 1971. However, the purchasing power of the dollar has eroded during these years through increases in the prices of consumer goods. The second set of figures in Table 6.1 takes account of this factor by converting the income data into constant (1961) dollars. Thus it provides a better perspective to examine changes in incomes and shows that there has been consistent improvement in real incomes over the years since 1951, with the 1960s showing the more spectacular increases. The data also indicate that improvements in incomes were not restricted to any particular region but were experienced throughout the country. However, the rates of regional increases were such that, as shown in Table 6.2, the relative differentials between incomes in the five main regions tended to persist.

Table 6.3 shows how the size distributions of income have shifted over the last 20 years expressed in terms of constant (1961) dollars. The median income of families has consistently moved up so that while 77% of all families received an income of less than \$5,000 in 1951, this proportion decreased to 52% in 1961 and to 31% in 1971. On the other hand, fewer than 3% of all families received an income of \$10,000 or more in 1951 but this proportion more than doubled by 1961 and had increased to 24% by 1971.

6.1.3 Major sources of income

The percentage distribution of families by major source of income is shown in Table 6.4 for selected years between 1951 and 1971 within income quintiles. Data on income are quite informative when classified in a quintile arrangement. For this type of analysis families are arranged in an ascending order of the size of total income and divided into five equal groups or quintiles. The characteristics (e.g. major sources of income) of each of the five groups are then compared. Table 6.4 shows that the major source of income of nearly half the families (48.2%) in the lowest income quintile in 1951 was wages and salaries. By 1971 only one third of all families in this group gave wages and salaries as their major source of income. In 1951 the main source of income of 26.6% families in this quintile was government transfer payments; by 1971 this proportion had risen to 46.2%. At the other end of the scale over four fifths of families (85.9%) in 1951 in the highest quintile received their major source of income in the form of wages and salaries. By 1971 this percentage had risen to 91.2%, whereas the second-largest source of income for this group (net income from self-employment) declined from 11.6% to 5.6% over the period.

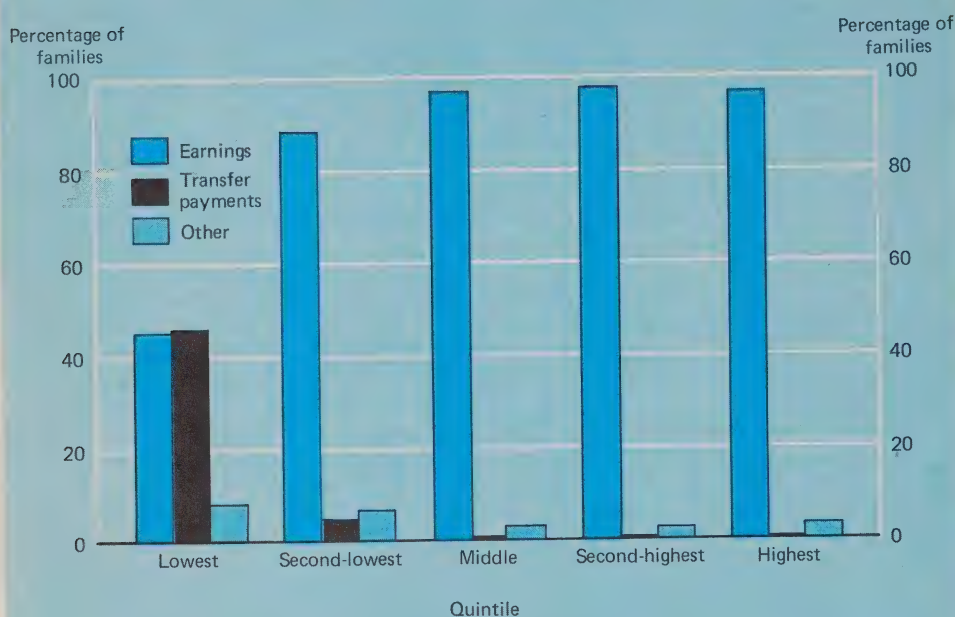
6.1.4 Provincial income distributions

While family incomes in current (1971) dollars averaged \$10,368 in that year, Table 6.5 shows that at the provincial level they ranged all the way from a low of \$6,750 for families in Prince Edward Island to a high of \$11,483 for Ontario families. The next highest were in the western provinces where incomes of families averaged \$11,212 in British Columbia, followed by \$10,221 in Alberta. Family income distributions in 1971 showed almost half of the more than 5 million Canadian families (45.3%) with incomes of \$10,000 or over. For Ontario, the corresponding figure was 54.2% of the 1.9 million families in that province. At the other end of the scale only 15.2% of Prince Edward Island's roughly 23,000 families, and 24.2% of Newfoundland's 104,000 families, had incomes at this level.

6.1.5 Incomes by family characteristics

Distributions of family incomes obtained in the Surveys of Consumer Finances are classified by a number of income-influencing variables relating to different characteristics of the family and its head. These include such characteristics of the head as sex, age, marital status, employment status, occupation group, and education. Other family characteristics classified by income include tenure (whether owner or tenant), size of family, number of

Major source of family income within income quintiles, 1971



children, number and combinations of income recipients, and labour force participation of wife. While only three summary classifications of family income are presented here relating to age and sex of head, education of head, and income recipients, data on all variables listed above may be found in the annual report *Income distributions by size in Canada*, Catalogue No. 13-207.

Incomes by age and sex of family head. Average incomes in 1971 of the estimated 4.7 million families in Canada with male heads were almost twice that of the roughly 400,000 families with female heads. Table 6.6 shows that family incomes averaged \$10,727 for families with male heads as compared to \$5,901 for those with female heads. This difference was most pronounced at the younger age levels and it gradually lessened with advancing age to the point where incomes of families with female heads 65 years of age and over averaged higher than those headed by males in the same age bracket.

Incomes of families with male heads increased at each successive age group to reach a peak at the 45-54 age range and then fell sharply at the 65-and-over age levels. From an average of \$8,248 for families with male heads under 25, family incomes rose to an average \$12,361 for those with heads 45 to 54 and dropped back to \$5,808 for those 70 years and over. Families with female heads showed a rise from \$3,668 in the under-35 range to \$6,660 for the 45-54 group but then peaked at a much higher age level averaging \$7,445 for families whose female heads were 65 years of age and over.

Incomes by education of family head. Education of the family head is another factor which exerts a marked influence on family income. For example, Table 6.7 shows that the average family income in 1971 of families whose heads had a university degree was nearly two and a half times that of families whose heads had received elementary schooling or less. The differences in income distributions underlying these averages are such that 80% of families whose heads had a degree showed incomes in 1971 of \$10,000 or more, and 18% attained \$25,000 or more. This compares with fewer than 30% reaching the \$10,000 mark and fewer than 1% the \$25,000 level for families whose heads had no more than elementary education.

Recipients of family income. Changes in the composition or economic activities of the family may result in additions or reductions to family income on the part of one or more of its members. Table 6.8 provides a summary picture of income distributions for several different combinations of income recipients within the family structure. The data are shown for (a) the major sub-category of families (husband-wife families), and (b) all other families. The latter include single-parent families and a residual group consisting of two or more related adults such as brothers and sisters.

Table 6.8 shows that the average income of husband-wife families with at least three income recipients (husband, wife and other relative) was \$13,755 as compared with only \$8,687 for husband-wife families in which the head was the only recipient. Other families (one-parent families and those of two or more related adults) had much lower average incomes ranging from \$8,004 for families with at least two income recipients (head and other family member) to \$4,133 for those in which the head was the only income recipient.

6.2 Family spending

Household surveys of family expenditure provide information on consumer spending that can be related to family characteristics such as geographic location, family size and income level. In general, the survey program has consisted of two phases: the collection, by means of monthly record-keeping surveys throughout the reference year, of detailed information on family food expenditures; and the collection of information by annual recall of all family expenditure, income and changes in assets and liabilities. The record-keeping phase was not featured in all the survey programs, and this has been particularly true of the more recent surveys.

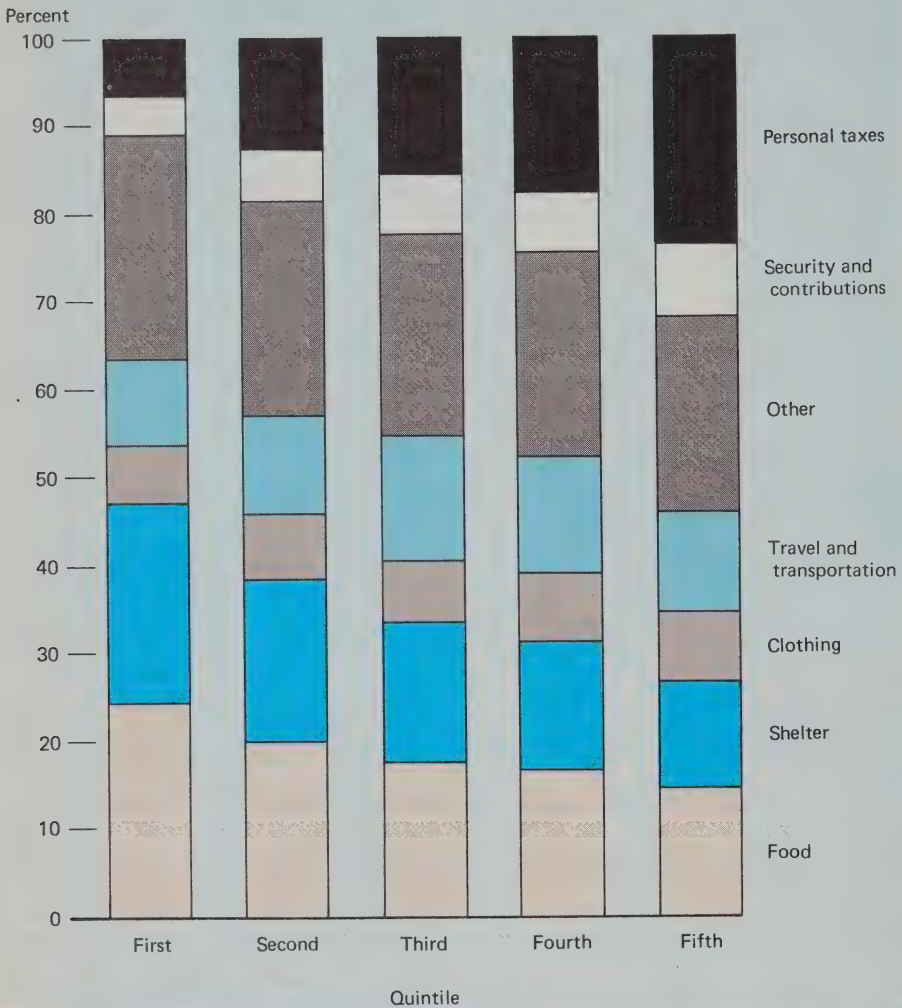
A primary use of such surveys is to provide information for constructing, reviewing and revising the weights of the consumer price indexes (see Chapter 21). Initially these small-scale sample expenditure surveys carried out in selected Canadian urban centres since 1953 were designed to follow changes in the patterns of a well-defined group of middle-income urban families known as the "target group" of the consumer price index. In recent years the demand for expenditure statistics to serve other needs of government, business, welfare organizations and academic research has resulted in a widening in the scope and size of the surveys. This culminated in the expansion of the biennial program for 1969 to provide a large-scale national survey for the first time since 1948-49 covering both urban and rural households in the 10 provinces.

The most recent survey, the tenth in the series, was carried out in February and March 1973 and refers to the calendar year 1972 (see *Urban family expenditure, 1972*, Catalogue No. 62-541). While no restrictions on family composition or income were imposed, in order to produce data for individual cities of a more satisfactory nature, the main sample was concentrated in eight major urban centres rather than in 11 as in the 1964, 1967 and major urban centre part of the 1969 survey. For the 1972 survey the sample of 4,977 households was distributed in eight census metropolitan areas including city proper and fringe areas, namely St. John's, Halifax, Montreal, Ottawa (excluding the Quebec portion), Toronto, Winnipeg, Edmonton, and Vancouver.

6.2.1 Family (spending unit) concept

The definition of a family or spending unit used in the family expenditure surveys is not the same as that of the census, or the "economic family" concept used in the Surveys of Consumer Finances (see Section 6.1.1). The family or spending unit is defined as a group of persons dependent on a common or pooled income for the major items of expense and living in the same dwelling or one financially independent individual living alone. Never-married sons or daughters living with their parents are considered as part of their parents' spending unit. In the great majority of cases the members of spending units of two or more are related by blood, marriage or adoption, and are thus consistent with the "economic family" definition employed in surveys of family income, i.e., "a group of individuals sharing a common dwelling unit and related by blood, marriage or adoption". However, it should be noted that according to the "economic family" definition, unrelated persons living in the same household would be counted as unattached individuals. Under the definitions in the expenditure survey, it is possible for two or more unrelated persons to comprise one family or spending unit.

Patterns of family expenditure by family income quintile, 1972



6.2.2 Family expenditure patterns

In addition to trend comparisons it is useful to classify the expenditure patterns of families by a number of related variables (e.g. family income, size of family, sex and age of family head, and so on) to determine the influence and effects of these various factors on family spending habits. Such classifications are available in the report *Urban family expenditure, 1972* (Catalogue No. 62-541). This Section provides a brief trend comparison of expenditure patterns for 1969-72 and a classification of family expenditures in 1972 by income levels, the latter being the most influential of all factors bearing on most items of family spending.

Expenditure trends, 1969-72. While the average net income of survey families of two or more persons in eight Canadian cities rose from \$10,560 in 1969 to \$12,549 in 1972, Table 6.9 indicates that there were no significant shifts in the over-all expenditure patterns of these families during this period. The one possible exception arises from the foregoing increase in average incomes which resulted in personal income taxes forming 17.6% of total family expenditure in

1972 as compared to 15.6% in 1969. Food (17.1% in 1972), shelter (15.6%), clothing (7.4%), travel and transportation (12.1%) and other major items of expenditure were all within a fraction of 1% of the proportions which they consumed of the family budget in the earlier 1969 survey year.

Expenditure patterns by income, 1972. Table 6.10 shows the expenditure patterns in 1972 of survey families of two or more persons arranged by income quintiles (families ranked in ascending order of income size and then divided into five equal groups). For example, the average net income before taxes of the 20% of all families comprising the lowest quintile was \$5,035 as compared to an average of \$22,696 for the 20% of families forming the highest quintile.

As might be expected the percentages of total expenditure on specific items in the family budget showed some significant differences throughout the five income quintiles. The 20% of families in the lowest group spent on the average 47.2% of their total expenditures on food and shelter alone. The proportion ranged downward to only 26.9% for the 20% of families in the highest group. The latter group spent a slightly higher proportion of their total budget on such items as clothing, furnishings, travel and recreation. But the major offsetting difference was the amount for personal taxes which represented only 6.8% of total expenditures for families in the lowest group compared with 23.5% for those in the highest quintile. Evidence of the better financial position of families in the higher quintiles, despite their much larger tax expenditures, can be seen from the net change in assets and liabilities for 1972 which ranged from an average deficit of \$305 for families in the lowest quintile group to a gain of \$2,263 for those in the highest group. Other interesting differences in the characteristics of families over the low-to high-income ranges as shown in Table 6.10 were the following percentages: home-owners, from 34.2% of all families to 72.6%; car or truck ownership, from 43.6% to 89.3%; and wife employed full-time in the labour force, from 3.9% to 31.6%. It should be noted also that the successive income classes are not homogeneous as a group with respect to family size or number of full-time earners; average family size rose from 2.80 persons in the lowest class to 4.07 persons in the highest, and the number of full-time earners from 0.32 to 1.53 persons.

6.3 Federal welfare and income security programs

A wide range of income security and social service programs is provided by the federal, provincial and local governments. The Department of National Health and Welfare has the major federal role in income security and welfare. Other federal agencies with important social security functions include the Unemployment Insurance Commission, the Department of Veterans Affairs and the Department of Indian Affairs and Northern Development. The publicly funded and administered programs are complemented by a wide range of services provided by voluntary agencies.

The Department of National Health and Welfare administers the Canada Pension Plan, the Old Age Security and Guaranteed Income Supplement programs, and Family Allowances. Through the Canada Assistance Plan, the federal government also shares in the financing of provincial social assistance programs, child welfare services, services for the elderly, including institutional care, and a variety of social services for needy persons. The National Council of Welfare provides a channel of communication between citizens' groups and the Department of National Health and Welfare. It consists of 21 private citizens selected from organizations of consumers of welfare services and from institutions involved, directly or indirectly, in providing those services.

In January 1973 the federal government called for a joint federal-provincial review of the social security system. The first meeting of the ministers of welfare took place in April of that year. The principal aims of the review are to ascertain that, first, the primary source of social security should be a job and earnings from a job; second, the first line of defence against temporary loss of earnings should be wage-related income insurance (i.e. unemployment insurance and workmen's compensation); third, the income of those who are working, but at unacceptably low earnings, should be supplemented; fourth, for those who genuinely are unable to work there should be a guaranteed income; and fifth, for those who need it, there should be a range of social services which enables them to live fuller and more productive lives. The Conference agreed to set up three federal-provincial working parties: on income maintenance, on employment, and on social services; and agreed to complete the review by

April 1975. The first results of these studies have already been reflected in the changes in the Family Allowance, Canada Pension Plan, and Old Age Security programs, as outlined below.

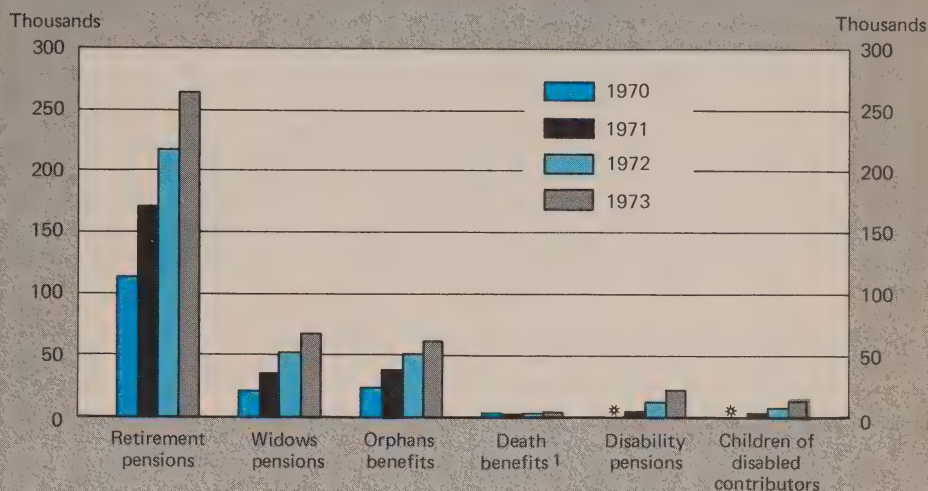
6.3.1 Canada Pension Plan

The Act establishing the Canada Pension Plan (CPP) received Royal Assent on April 3, 1965 and was proclaimed in force on May 5 of the same year. Collection of contributions commenced in January 1966 and in January 1967 the first benefits were paid in the form of retirement pensions. In February 1968 the first survivors benefits were paid and in February 1970 the first disability benefits were paid. The Plan is applicable throughout Canada except in Quebec where a comparable scheme, the Quebec Pension Plan, has been established (see Section 6.3.2). Benefit credits accrued under the Canada and Quebec plans are portable throughout Canada. Until 1973 the Canada and Quebec Pension plans were closely co-ordinated and operated virtually as a single program. Changes in the Quebec Pension Plan effective January 1973 created differences between the two plans. However, amendments to both the Canada and Quebec Pension plans effective January 1974 removed the more significant differences. The latter changes were: (1) an increase in the pensionable earnings ceilings to \$6,600 in 1974 and to \$7,400 in 1975; (2) removal of the 2% annual limit on escalation of benefits and escalations in accordance with increases in the consumer price index; and (3) restoration of the purchasing power to benefits which had become payable between 1967 and 1973. These benefits were all recalculated and increased for payment in 1974 as though the 2% escalation limit had never existed.

All employed members of the labour force between the ages of 18 and 70 (subject to certain exceptions set out in the Act and Regulations) contribute to the Plan. Employees contribute 1.8% on earnings from \$701 to \$6,600 in 1974, which is matched by the employer; self-employed persons contribute 3.6% providing they have earned at least \$900. Benefits payable are retirement pensions, widows and disabled widowers pensions, orphans benefits, pensions for disabled contributors and their dependent children, and a lump-sum death benefit. Summary statistics on benefits being paid out of the Canada Pension Plan as at March 1973 appear in Table 6.11. Beginning in 1970, retirement pensions became payable to contributors aged 65 years and over provided that, if under age 70, they are retired from regular employment. For contributors who have reached age 70, retirement pensions are payable regardless of whether or not they are retired. Pensions become payable at their full rate beginning in January 1976. This rate amounts to 25% of a contributor's updated pensionable earnings averaged over the number of years he could have contributed to the plan, exclusive of any years in which he was receiving a CPP disability pension. For retirement pensions that commence after 1975, provision is made for substituting the pensionable earnings for months after 65 for months prior to 65, and for dropping out 15% of the months and earnings in the months a person could have contributed prior to age 65, providing this does not reduce the number of months for averaging to less than 120. Contributors who will become eligible for a retirement pension prior to 1976 will receive reduced amounts. The method of calculating these benefits is discussed in detail in previous editions of the *Canada Year Book*.

Survivors benefits are paid to, or on behalf of, the survivors of a deceased contributor who has made contributions for a minimum of three years for those whose benefits commence before 1975. The full widow's pension is payable to disabled widows, to widows with young children, and to other widows 45 years of age or older. A partial widow's pension is payable to widows between the ages of 35 and 45. The full pension of a widow below the age of 65 includes a flat rate (which in 1974 stood at \$33.76) plus 37.5% of her husband's retirement pension. At age 65 the benefit formula changes. A widow aged 65 or over gets a pension of 60% of her husband's retirement pension in addition to her Old Age Security. The same benefit provided to a disabled widow is available to a disabled widower who was financially dependent on his wife at the time of her death. Orphans benefits are payable on behalf of a deceased contributor's unmarried dependent children, whether or not the mother is alive. It may also be paid on behalf of a female contributor if she was maintaining the child at the time of her death. The rate for each of the first four children equals the flat rate component of the widow's pension. For additional children, the rate for each one is one half the flat rate amount. Benefits are payable until the child reaches 18, or until age 25 if the child continues to attend school or university full-time. When a contributor dies a lump-sum death benefit equal to six times his monthly retirement pension up to a max-

Canada Pension Plan benefits: number of beneficiaries, by type of benefit, March 1970-73



imum of 10% of the year's maximum pensionable earnings in the year of death, or \$660 in 1974, is paid to the estate.

Any contributor or beneficiary under the Plan has the right to appeal decisions. Appeals by employees and employers regarding coverage and contributions are first made to the Minister of National Revenue and, if the individual is not satisfied with the Minister's decision, he may appeal to the Pension Appeals Board, whose decision is final. For self-employed persons, appeals regarding the assessment of their earnings for Canada Pension Plan purposes are treated in the same way as appeals under the Income Tax Act. With respect to benefits, there is a three-stage appeal procedure: first, to the Minister of National Health and Welfare; second, to a Review Committee; and third, to the Pension Appeals Board, whose decision is final. The legislation provides for investment of the funds collected annually by the Plan, less the benefit payments and administrative costs. These funds are made available to a province for investment under a formula based on the ratio of the province's contributions to total contributions to the Plan. Funds not borrowed by the provinces are invested in federal securities. The Canada Pension Plan is entirely self-supporting. A statement of the CPP's financial situation appears in Tables 6.12 and 6.13.

An Advisory Committee, representing employers, employees, self-employed persons and the public, regularly reviews the operations of the Plan, the state of the investment fund and the adequacy of coverage and benefits, and reports to the Minister of National Health and Welfare. The legislation authorizes arrangements to be made with other countries to achieve as full coverage of persons in the labour force in Canada as possible and to ensure the portability of pension credits between Canada and the countries concerned. For a detailed description of private pension plans, see the *1972 Canada Year Book* p 360.

6.3.2 Quebec Pension Plan

The Quebec Pension Plan (QPP) was established in 1965 as the Quebec counterpart of the Canada Pension Plan (see Section 6.3.1). Quebec amended the Quebec Pension Plan effective January 1, 1973 with respect to the earnings ceiling, the maximum escalation fac-

tor in the pension index, the retirement test and benefits for widows, disabled widowers, disabled contributors, orphans and children of disabled contributors. These changes were not made in the Canada Pension Plan. In 1973 the Quebec Pension Plan was again amended to reflect the same changes being made to the Canada Pension Plan. Effective January 1, 1974 the pensionable ceiling was raised to \$6,600 in 1974 and \$7,400 in 1975. As well, the Quebec Pension Plan provided for full escalation of benefits payable from January 1, 1974 and restoration of the purchasing power of benefits payable prior to this date as if there had been no ceiling on the pension index.

The amendments to both plans which took effect January 1, 1974 had the effect of bringing the CPP and the QPP back into alignment with respect to the pensionable earnings ceiling and benefit escalation. Several differences still remain between the two plans. Under the QPP the survivors and disability benefits have a higher flat rate component, \$86.56 in 1974 rather than \$33.76 under CPP; orphans and children's benefits under the QPP are fixed at \$29 effective January 1, 1974 whereas these benefits continue to be increased under the CPP, and the QPP uses a different retirement test than is being used under the CPP. Administrative arrangements have been worked out between the Canada and Quebec Pension plans to deal with dual contributors. In 1972, 124,609 beneficiaries received \$58.7 million in benefits.

6.3.3 Old age security and guaranteed income supplement

Under the Old Age Security Act of 1951 and its subsequent amendments, an OAS pension is payable to a person aged 65 and over provided the person has resided in Canada for 10 years immediately preceding the approval of an application for the pension. Any gaps in the 10-year period may be offset if the applicant has been present in Canada prior to that 10-year period after the age of 18 for periods of time equal to three times the length of the gaps. In this case, the applicant must also have resided in Canada for at least one year immediately preceding the month in which his application for pension may have been approved. The pension is also payable to persons aged 65 with 40 years of residence in Canada since age 18, no matter where they may live. A pensioner may absent himself from Canada and continue to receive payments with the following proviso: if he has lived in Canada for 20 years since his 18th birthday, payment outside Canada may continue indefinitely; if not, payment is continued for six months after the month of departure and is then suspended to be resumed only in the month in which he returns to Canada.

A 1966 amendment to the OAS Act provides for the payment of the Guaranteed Income Supplement (GIS). Pensioners with no other income may receive the maximum monthly Supplement; those with other income may receive a partial Supplement. The maximum GIS is reduced by \$1 a month for every \$2 a month of income over and above the Old Age Security pension and any supplement that may have been received. Income for this purpose is the same as that computed in accordance with the Income Tax Act. In the case of a married couple, each is considered to have one half of their combined income. Where one spouse will not be receiving the Old Age Security pension at any time in the current year, six times the amount of the monthly OAS pension is deducted from one half of the combined income in calculating the income of the pensioner for purposes of determining the amount of the Supplement. In October 1974 the OAS stood at \$117.02. For a single and a married pensioner whose spouse was not in receipt of the OAS, the maximum monthly GIS on the above date stood at \$82.08. For a married pensioner whose spouse was also in receipt of the OAS the maximum monthly GIS for each stood at \$72.89. The OAS and maximum GIS are adjusted every quarter year to reflect increases in the consumer price index.

The Old Age Security program is administered by the Department of National Health and Welfare through regional offices located in each provincial capital at which applications for pension are received. The regional office in Edmonton administers the program for residents of the Yukon Territory and the Northwest Territories. Summary statistics concerning the OAS and GIS programs appear in Table 6.14.

6.3.4 Family Allowances

A revised Family Allowances Act came into effect on January 1, 1974, replacing the Family Allowances Act of 1944 and the Youth Allowances Act of 1964. Family Allowances are payable for any dependent child under 18 years of age who is resident in Canada and has at

least one parent resident in Canada who is a Canadian citizen, a landed immigrant or a non-immigrant admitted to Canada. In contrast with the previous legislation, the allowance is payable for the children of immigrants in the month after they are legally landed and there is no requirement that the children attend school. The allowance is normally paid to the mother of the child. Under the Act a province may, by legislation, vary the allowance basing it on the number of children per family, their ages, or both, provided that (a) no allowance is less than 60% of the current federal rate (see below), and (b) total payments in a province with its own rates, over a three-year period, amount to the same as if the federal rate had been in effect.

In Quebec, families receive \$12 a month for the first child, \$18 for the second, \$28 for the third and \$31 for each of the fourth and subsequent children with an additional \$5 for each child 12 to 17 years of age. In Alberta the rates vary only with the child's age: for a child up to and including six years of age, \$15; for those seven to 11, \$19; 12 to 15, \$25; and those of 16 and 17, \$28. Quebec pays, in addition to the allowance mentioned above, a provincial supplement of \$3 a month for the first child, \$4 for the second, \$5 for the third and \$6 for each additional child. Prince Edward Island pays a similar supplement of \$10 a month for each child in excess of four. Families to whom a provincial law of this kind does not apply receive the uniform federal monthly allowance which in 1974 stood at \$20 per child.

The Family Allowance is taxable. The person who claims a child as a dependent for income tax purposes must also declare the allowance as income for tax; but if the child is not claimed as a dependent for income tax, the person to whom the allowance is paid must declare the allowance for taxation. A non-taxable Special Allowance of \$20 a month is paid on behalf of children in the care of, and maintained by, a government, a government agency or approved private institution. This allowance is normally paid to the institution which has the care of the child but in special circumstances it may be paid to the child's foster parents. Provinces do not have the power to alter the rate of Special Allowance.

The Family and Special allowances are to be adjusted every January in accordance with the 12-month average of the consumer price index (CPI) ending on the previous October 31 over the 12-month average of the CPI that ended one year prior to that date. If that ratio is less than one, no adjustment is to be made. The program is administered by the Department of National Health and Welfare through regional offices in each provincial capital. The regional director located at Edmonton also administers the accounts of residents in the Yukon Territory and the Northwest Territories. The accounts of families resident outside Canada are administered by the regional office in the province where they last lived. Allowances are paid from the Consolidated Revenue Fund.

Statistics for the year ended March 31, 1973 on the operation of the former Family Allowances program under which allowances were paid on behalf of children under 16 years of age appear in Table 6.15, and statistics on the former Youth Allowances program paid on behalf of certain children 16 and 17 years of age appear in Table 6.16. (See the *1973 Canada Year Book* pp 257-258 for descriptions of the former Family Allowances and Youth Allowances programs.)

6.3.5 New Horizons Program

The New Horizons Program for retired Canadians was established by Order in Council and announced by the Minister of National Health and Welfare in July 1972. Primarily, the program was designed to alleviate the loneliness and sense of isolation which characterize the lives of many older people by offering them the opportunity to participate more actively in the life of the community. Grants are made available to groups of retired Canadians consisting generally of no less than 10 members, for the purpose of planning and operating projects in which their talent and skills are to be utilized for their own betterment, that of other older persons, or of the community. Projects must be non-profit in nature and of no commercial benefit to others. New Horizons is not an employment program, that is, no money is allowed for salaries to the participants. Projects may be funded for up to 18 months. There is no fixed limit to the amount of a grant.

Projects funded to date include physical recreation; crafts and hobbies; historical, cultural and educational programs; social services; information services; and activity centres. As of May 1, 1974, 2,107 projects involving over 460,000 people have been awarded \$12,043,276. Table 6.17 presents the breakdown of projects funded in each province and territory by fiscal year.

6.3.6 Emergency welfare services

The function of the Emergency Welfare Services Division of the Department of National Health and Welfare is to develop and maintain community capability to provide the basic survival and emergency social services in any emergency in Canada. This consists primarily of five emergency services — lodging, feeding, clothing, registration and inquiry, and personal services. A program has been developed and is being maintained so that, given an emergency situation, the Division can co-ordinate the efforts of welfare departments at all levels of government as well as organizations, private social agencies, related professional groups, businesses and individual volunteers to allow for recovery from the given situation and to promote rehabilitation.

6.3.7 International welfare

Canada is actively involved in the social development activities of the United Nations. The Department of National Health and Welfare sits on the Executive Board of UNICEF and participates in the work of the Economic and Social Council and the General Assembly of the United Nations, and in those UN seminars and conferences dealing with social policy. The Department also works with the Organization for Economic Co-operation and Development on the development of social indicators, income transfer policy and the role of women in the economy. The Department of National Health and Welfare, through the programs of the Canadian International Development Agency, provides advisers for service abroad and arranges for the training in Canada of foreign students and government officials when recommended by their governments.

The federal department and provincial departments and agencies participate in the work of several international voluntary organizations including the International Council on Social Welfare and the International Union of Family Organizations. Informal discussions on the possibility of bilateral agreements in the sphere of social security have been held with the United Kingdom, Italy and the United States. Canadian officials engaged in the field of social security participate in the work of the International Social Security Association and the social security program of the International Labour Organization. For some years, Canada has had observer status at meetings of the Inter-American Social Security Association.

6.4 Federal-provincial welfare programs

6.4.1 Canada Assistance Plan

The Canada Assistance Plan (CAP) was enacted in 1966 as a comprehensive public assistance measure to replace the Unemployment Assistance Act, 1956, and to complement other income security measures. Under agreements with the provinces and territories, it provides for federal contributions of 50% of the cost of assistance to persons in need and certain health and welfare services (Part I of the Act), and work activity projects that prepare persons in need for employment (Part III). CAP also provides for federal sharing in the cost of provincial welfare services to Indians on reserves, on Crown land, or in unorganized territories (Part II), but the Act does not limit federal contributions to 50%.

"Assistance" includes any form of aid to, or on behalf of, persons in need for the purpose of providing basic requirements such as: food, shelter and clothing, including maintenance of children in the care of provincially approved child welfare agencies; items necessary for the safety, well-being, or rehabilitation of a person in need, or for a handicapped person, such as special food or clothing, telephone, or rehabilitation allowance; maintenance in a home for special care such as a home for the aged, a nursing home or an institution for children; travel and transportation; funerals and burials; health care services; welfare services purchased by, or at the request of, provincially approved agencies; and comfort allowances for persons in institutions. "Health care services" may include medical, surgical, obstetrical, optical, dental, and nursing services, drugs, dressings, prosthetic appliances, and other items associated with the provision of such services. "Welfare services" include rehabilitation, casework, counselling and assessment, adoption, homemaker, day-care, and similar services supplied to persons in need or to persons to whom the service is essential if they are to remain self-supporting.

The only eligibility requirement specified under the Canada Assistance Plan for individuals or families applying for assistance under provincial programs is that of need,

which is determined through an assessment of budgetary requirements as well as of income and resources. A province must not require previous residence to be a condition of eligibility for assistance. Rates of assistance and eligibility requirements are set by the province so that they may be adjusted to local conditions and the needs of special groups. The provinces must establish procedures for appeal by individuals from decisions that relate to the provision of assistance. The cost of "improving and extending welfare services" is defined as the amount by which annual expenditures of providing welfare services exceed that of the period from April 1, 1964 to March 31, 1965. Items included in this category are the costs of salaries and employee benefits, travel, research, consultation, fees for conferences and seminars, and certain costs of staff training. Transfer of funds to Quebec are made under the Established Programs (Interim Arrangements) Act.

The number of recipients of financial aid under provincial social assistance programs is shown in Table 6.18. Federal payments under the Canada Assistance Plan amounted to \$768.2 million in the fiscal year 1972-73, a figure which includes the special arrangement with Quebec (see Table 6.19). The Canada Assistance Plan has almost completely replaced the Unemployment Assistance Act. During the year ended March 31, 1973, the federal government made payments of \$1.3 million under the Unemployment Assistance Act to Quebec, Alberta and the Northwest Territories.

6.4.2 Allowances for blind and disabled persons

Although some provinces still accept applications from blind and disabled people under the Blind Persons Act and the Disabled Persons Act, a number of provinces have chosen to assist them within the framework of their general assistance program under the terms of the Canada Assistance Plan. The provinces may also transfer current recipients of allowances under these two Acts to their general programs, provided that there is no decrease in benefits.

By the end of 1973 the Atlantic Provinces, Manitoba and the Yukon Territory were still accepting applications under the Blind Persons Act of 1951, as amended. This Act provides for federal reimbursement to the provinces for allowances to blind persons aged 18 or over who meet the 10-year residence requirement and specific income limits. For an unmarried person, total income including the allowance may not exceed \$1,500 a year; for a person with no spouse but with one or more dependent children, \$1,980; for a married couple, \$2,580. The income of a blind couple may not exceed \$2,700. Statistics on allowances for the blind appear in Table 6.20. The federal contribution may not exceed 75% of \$75 a month or the provincial allowance paid, whichever is less. The province administers the program and may fix the amount of allowance payable and the maximum income allowed. Effective April 1, 1965, compensation to Quebec was made under the Established Programs (Interim Arrangements) Act.

By the end of 1973, only New Brunswick, Manitoba and the Yukon Territory were still accepting applications under the Disabled Persons Act of 1954, as amended. This Act provides for federal reimbursement to the provinces for allowances paid to permanently and totally disabled persons aged 18 and over who meet the required definition of "permanent and total disability", the 10-year residence requirement, and specified income limits. For an unmarried person, total income, including the allowance, may not exceed \$1,260 a year. For a married couple, the limit is \$2,220 a year except that, if the spouse is blind within the meaning of the Blind Persons Act, the income of the couple may not exceed \$2,580 a year. Statistics for recent years are given in Table 6.20. The federal contribution may not exceed 50% of \$75 a month or the provincial allowance paid, whichever is less. Effective April 1, 1965, compensation to Quebec was made under the Established Programs (Interim Arrangements) Act.

6.4.3 National welfare grants

The National Welfare Grants program was established in 1962 to help develop and strengthen welfare services in Canada. Under the program, project grants are made to provincial and municipal welfare departments, non-governmental welfare agencies, citizens' organizations and universities. Fellowships are provided to individuals seeking advanced training in the social welfare field. The variety of provisions within the program, with its associated consultative services, allows it to operate as a flexible instrument in the development of welfare services and to give major emphasis to experimental activities in the welfare field. The allotment for the year ended March 31, 1973 was almost \$3 million.

The federal government shares with the provinces the cost of general welfare bursary training and staff development grants. A wide range of demonstration, research and social action projects are eligible for grants, as are developmental projects related to welfare manpower. Fellowships are available for study at Canadian and foreign universities. Grants available to assist Canadian schools of social work with teaching and field instruction costs terminated on March 31, 1974. Effective April 1, 1967, a mental retardation grant was established for a five-year period but has now been extended. Part of this grant is administered in conjunction with the National Welfare Grants program.

Expenditures under the National Welfare Grants program for the year ended March 31, 1973 totalled \$2,904,445. A sum of \$1,794,186 was expended on demonstration projects; \$355,859 on research projects; \$573,512 on manpower utilization and development including demonstration, the establishment of a national agency, teaching and field instruction, fellowships and a visiting professorship; \$92,216 on general national agency projects; and \$88,671 on general welfare projects including the provincially administered bursary and staff development programs.

6.4.4 Vocational rehabilitation

Under the provisions of the Vocational Rehabilitation of Disabled Persons (VRDP) Act, the federal government contributes 50% of the costs incurred by a province in providing a comprehensive program for the vocational rehabilitation of physically and mentally disabled persons. A comprehensive program includes such services as medical, social and vocational assessment, counselling, restoration services, the provision of prostheses, training, maintenance allowances and the provision of tools, books and other equipment. These services are provided directly by the provincial government or purchased from voluntary agencies. Sharable costs also include the salary and necessary travelling costs of staff whose duties are directly related to this program and other administrative expenses necessary for the co-ordination and delivery of services to the disabled. Other rehabilitation services provided by agencies and voluntary organizations may be funded by a province and are eligible for 50% reimbursement from the federal government under the Canada Assistance Plan. Since April 1, 1973 the VRDP Act has been administered by the Rehabilitation Services Division in the Canada Assistance Plan Directorate of the Department of National Health and Welfare, which also co-ordinates activities with other federal departments. During the fiscal year April 1972 to March 1973, the federal government contributed \$7,450,357 to the provinces under the Vocational Rehabilitation of Disabled Persons Act.

6.4.5 Family planning

The Family Planning Division of the Department of National Health and Welfare was formed in January 1972 to provide a centre of responsibility for the federal family planning program. Its objective is to ensure, in co-operation with the provinces and territories, the accessibility and availability of family planning services to all Canadians who want them by: informing Canadians about the purpose and methods of family planning so that the exercise of free individual choice in this area will be based on adequate knowledge; promoting the training of health and welfare professionals and other staff involved in family planning services; aiding family planning programs operating under public or voluntary auspices through federal grants-in-aid and joint federal-provincial programs. The Division's major program activities include consultation, information, training and the family planning grants. Consultation is provided to a broad range of government and non-government organizations. Informative educational material on family planning, sex education and family life education is distributed free of charge. Canadian material on these subjects is currently being developed. To the extent that it is feasible, the Division's consultants assist in the training of professional health, welfare and educational staff and others working in the area of family planning.

In the two years following the inception of the Family Planning Grant program in April 1972, a total of \$2.4 million has been awarded for the support of innovative family planning services, demonstration, training and research projects and for university fellowships. Grant recipients have included provincial and municipal government departments, national and local voluntary family planning agencies, native community organizations and university departments.

6.5 Provincial welfare programs

Provincial departments of social services are responsible for the administration of welfare programs, although they may share their administration in certain fields with their municipalities (see Section 6.4). Voluntary agencies whose interests include the welfare of families and children and of groups with special needs, such as the aged, recent immigrants, youth groups and released prisoners, complement provincial programs. Social planning councils contribute to the planning and co-ordination of local welfare services. Local voluntary agencies and institutions may receive public grants, depending on the nature and standard of their services, although their main support is usually from United Appeal funds or from sponsoring organizations.

6.5.1 Social assistance

All provinces make legislative provision for assistance to persons in need and their dependents. Need is determined by the budget deficit method, that is, the needs of the applicant and his dependents are calculated according to a prescribed schedule or budget in which specific amounts are allocated to various items of need. The difference between the amount needed, thus calculated, and the income available to meet that need is the budget deficit, or the amount of the allowance, subject to any ceilings which may be imposed. In addition to allowances to cover items of basic need such as food, clothing, shelter, fuel and utilities, all provinces make provision for such special items as rehabilitation services, expenses incidental to education or to obtaining employment, counselling, homemaker services and institutional care. All provinces permit certain income or earnings exemptions and, under special circumstances, some provinces provide assistance to fully employed persons.

The provincial departments of welfare set rates of assistance and conditions of eligibility; they have regulatory and supervisory powers over municipal administration of assistance, and require certain standards as a condition of provincial aid. Municipal residence may determine the financially responsible authority within a province. The provincial authority takes responsibility for aid to persons residing outside municipal boundaries and for those who lack municipal residence. The administration of assistance varies. In Nova Scotia, Ontario, Manitoba and Alberta, allowances to persons with long-term need, such as needy mothers with dependent children, disabled persons and the aged, are administered by the province, other allowances being administered by the municipalities. In Newfoundland, Prince Edward Island and New Brunswick, all assistance is administered by the provincial authority. In Quebec, the province administers assistance through regional and local offices, except in Montreal where the municipality administers assistance on behalf of the province. In Saskatchewan, social assistance is administered by the province except in two municipalities. In British Columbia, social allowances are administered through regional and district offices of the provincial government and, in some municipalities, by municipal departments of welfare. In the seven provinces where the municipalities have some administrative responsibility, the proportion of the costs incurred by the municipality borne by the province varies from 40% to 100% of assistance paid.

6.5.2 Child welfare services

The term "child welfare services" refers particularly to statutory services for the protection and care of children who are neglected or who are temporarily or permanently without parental care. These include protection for children in their own homes; care in foster boarding homes or, when necessary, in institutions; adoption services; and services to unmarried parents. Child welfare services are available in all provinces under provincial legislation.

The programs are administered by the provincial authority or by local children's aid societies (voluntary agencies with boards of directors operating under charter and under the general supervision of provincial departments). In Newfoundland, Prince Edward Island, New Brunswick, Saskatchewan and Alberta, child welfare services are administered by the province; in Quebec, they are administered by recognized voluntary agencies and institutions, religious and secular; in Ontario, a network of local children's aid societies is responsible for the services; in Nova Scotia and Manitoba, services are administered by local children's aid societies in the heavily populated areas and by the province elsewhere; in British Columbia, services are administered on a regional basis by the province, and in two cities by local welfare departments. Children's aid societies and the recognized agencies in Quebec receive substantial provincial grants and sometimes municipal grants, and some receive support from private

subscriptions or from United Appeal funds. The cost of certain services and maintenance costs for children in care of a voluntary or public agency are sharable with the federal government under the Canada Assistance Plan.

Day nurseries for the children of working mothers are operated under either voluntary or public auspices. A number of provinces make capital grants for the establishment of day-care centres and provide operating subsidies.

6.5.3 Living accommodation for elderly persons

In all provinces, homes for the aged and infirm are provided under provincial, municipal or voluntary auspices. These homes are required to meet standards set out in provincial legislation relating to homes for the aged, welfare institutions or public health. Homes for the aged, regardless of auspices, are usually inspected and, in some provinces, must be licensed. Small, proprietary boarding homes for the care of well, elderly persons are found in some provinces. Those who suffer from long-term illnesses may be cared for in chronic or convalescent hospitals, private or public nursing homes and some homes for the aged. Costs of care in the chronic or convalescent hospitals are paid for through the provincial hospital plans. In the case of needy persons in the so-called homes for special care, maintenance costs are shared on a federal-provincial basis under the Canada Assistance Plan. Homes for special care "include homes for the aged, hostels, lodges, nursing homes, etc." Various terms are used in the different provinces and within provinces. In varying degrees, all provinces make capital grants toward the construction or renovation of homes for the aged by municipalities or voluntary organizations and, generally speaking, such homes are exempt from municipal taxation. Some provinces also make provision for capital grants to municipalities, charitable organizations or non-profit corporations for the construction of low-rental, self-contained and/or congregate living accommodation (homes for the aged, hostels, etc.) for older people. Independent living units for the aged may also be included in low-rental public housing projects for families.

6.6 Public expenditures on social security and welfare

Table 6.21 shows that public expenditures on social security and welfare programs reached \$7.0 billion in the fiscal year 1971-72 and \$8.6 billion a year later. In the former year this represented 7.3% of gross national expenditures, reaching 8.3% in 1972-73. Tables 6.11 to 6.20 show that most federal expenditures in this field went to income maintenance programs: Family Allowances, Old Age Security and Guaranteed Income Supplement, Unemployment Insurance, Veterans Pensions, and Canada Pension and Quebec Pension schemes. The Canada Assistance Plan and provincial welfare programs, as well as outlays on a variety of research and development, and special grants made up the remainder of the expenditures.

6.7 Veterans services

The Department of Veterans Affairs administers most of the legislation known collectively as the Veterans Charter and also provides administrative facilities for the Canadian Pension Commission, which administers the Pension Act and Parts I to X of the Civilian War Pensions and Allowances Act; for the War Veterans Allowance Board, which administers the War Veterans Allowance Act and Part XI of the Civilian War Pensions and Allowances Act; and for the Secretary General (Canada) of the Commonwealth War Graves Commission. The principal benefits now available to veterans are medical treatment for those eligible, land settlement and home construction assistance, education assistance for the children of the war dead, general welfare services, disability and dependents pensions and war veterans allowances. The work of the Department, except the administration of the Veterans' Land Act, is carried out through 18 district offices and four sub-district offices in Canada; the benefits of the Veterans' Land Act are administered through five regional offices and 26 district offices across Canada.

6.7.1 Pensions and allowances

6.7.1.1 Disability and dependents pensions

Canadian Pension Commission. The Canadian Pension Commission administers the Pension Act (RSC 1970, c.P-7) and Parts I to X of the Civilian War Pensions and Allowances Act (RSC 1970, c.C-20). Members are appointed by the Governor in Council who may also impose upon the Commission duties in respect of any grants in the nature of pensions, etc.,

made under any statute other than the Pension Act. It reports to Parliament through the Minister of Veterans Affairs. The Commission has district offices in principal cities across Canada with a Senior Pension Medical Examiner in charge.

The Pension Act. The evolution of Canada's pension legislation can be traced chronologically through special material usually appearing after major modifications in the laws affecting veterans pensions and through the statistical presentations to be found each year in earlier editions of the *Canada Year Book*. The Pension Act was the subject of major modifications in 1971 and details of the principal changes are described in the *1972 Canada Year Book*.

The Pension Act provides for payment of pensions in respect of disability or death resulting from injury incurred during or attributable to service with the Canadian Forces in time of war or peace. Provision is also made for supplementing up to Canadian rates, awards of pension to or in respect of Canadians for disability or death suffered as a result of service in the British or Allied Forces during World War I or World War II or payment of pension at Canadian rates in cases where the claim has been rejected by the government of the country concerned. In 1972 a Joint Study Group composed of representatives of veterans organizations, the Canadian Pension Commission and the Department of Veterans Affairs was formed to study the basic rate of pension payable under Schedules A and B of the Pension Act in an exploratory way, so as to delineate the problem related to the establishment and periodic adjustment of an equitable basic rate and to recommend possible solutions. As a result of the work of the Study Group the basis of pension was established as the earning power of an unskilled labourer in the Public Service based on the average of an established composite group of five Public Service classifications. In July 1973 the acceptance of this basis brought about a 24% increase in pensions. Thus the basic monthly pension for a single pensioner suffering 100% disability rose to \$392.00 with an additional pension of \$98.00 for a wife, \$51.00 for the first child, \$37.20 for a second child and \$29.40 for the third and each subsequent child. Pension awards to widows were increased to \$294.00 and additional payments for children or dependent brothers or sisters at the following rates: \$102.00 for one, \$176.40 for two and \$58.80 for a third or subsequent child or dependent brother or sister. Details as to the number and type of pensions being paid under the Pension Act as at March 31, 1973 are given in Table 6.22.

6.7.1.2 War Veterans Allowances and Civilian War Allowances

War Veterans Allowance Board. The War Veterans Allowance Board is a quasi-judicial body consisting, at present, of 10 members appointed by the Governor in Council. The Board administers the War Veterans Allowance Act and Part XI of the Civilian War Pensions and Allowances Act and reports to Parliament through the Minister of Veterans Affairs. The Board acts as an appeal court for an applicant or recipient aggrieved by a decision of a District Authority and may, on its own motion, review and alter or reverse any adjudication of a District Authority. The Board is also responsible for instructing and guiding the District Authorities in the interpretation of policy and for advising the Minister with respect to regulations concerning the administration of the Act.

War Veterans Allowance District Authorities. In 1950, 18 District Authorities were established in the regional districts of the Department of Veterans Affairs and granted full power to adjudicate on all matters arising under the War Veterans Allowance Act. In 1960, a separate authority — the Foreign Countries District Authority — was established to look after recipients living outside Canada. The members of a District Authority are employees of the Department of Veterans Affairs appointed by the Minister with the approval of the Governor in Council.

War Veterans Allowances. The War Veterans Allowance Act provides an allowance to otherwise qualified war veterans who, because of age or infirmity, are no longer able to derive their maintenance from employment and to ensure that their income does not fall below a specified scale. Widows and orphans of qualified veterans are eligible for benefits. Since its inception in 1930, the Act has been amended on 17 different occasions to meet additional needs of veterans and their dependents. The last amendments to the Act which became effective April 1, 1973, in addition to removing the real and personal property limitations which changed the means test to a modified income test, also provided new allowance rates and annual income ceilings. These new rates and ceilings were further increased under the provisions in the Act

for annual cost of living escalations in accordance with the increases in the consumer price index. The rates and ceilings established to take effect on January 1, 1974 provide for monthly payments of \$161.27 to a single beneficiary, subject to an annual income ceiling of \$2,415.24; for a married veteran, the allowance is \$274.44 and the ceiling \$4,133.28; for one orphan \$91.95 and \$1,391.40; for two orphans \$161.27 and \$2,283.24 and for three or more orphans \$217.24 and \$2,930.88. It should be noted that the ceiling for permissible annual income of a single or married beneficiary is raised by \$120.00 a year if the recipient or spouse is blind.

As at December 31, 1973 a total of 79,896 persons were receiving War Veterans Allowances: 45,396 veterans, 34,155 widows and 345 orphans; of this total, only 706 resided outside Canada. The annual cost for all recipients was estimated at \$101.8 million.

Civilian War Pensions and Allowances. Part XI of the Civilian War Pensions and Allowances Act makes available to certain groups of civilians and their widows and orphans, benefits similar to those available to veterans under the War Veterans Allowance Act. These groups, which performed meritorious service in World War I and World War II, include: Canadian merchant seamen of both wars; non-Canadians who served in Canadian merchant ships in either war; Canadian voluntary aid detachments of World War I; Canadian firefighters of World War II; Canadian welfare workers of World War II; Canadian transatlantic aircrew of World War II; and the Newfoundland Overseas Forestry Unit of World War II.

As at December 31, 1973, a total of 3,672 civilians, including 826 widows and 13 orphans, were receiving these allowances; only two resided outside of Canada. Total cost for the year was estimated at \$6.4 million.

6.7.1.3 Bureau of Pensions Advocates

The Bureau of Pensions Advocates was established under the Minister of Veterans Affairs by the amendments to the Pension Act 1971 (SC 1970-71, c.31), effective March 30, 1971. It succeeds the Veterans Bureau which had been in operation since 1930. The Bureau is not part of the Department of Veterans Affairs, but provides an independent professional legal aid service to applicants for awards under the Pension Act. The Chief Pensions Advocate is the Chief Executive Officer and is assisted by pensions advocates, all of whom are lawyers, located at the Bureau's head office in Ottawa and in district offices in major centres across Canada. Pensions Advocates represent applicants as counsel at Entitlement Board and Pension Review Board hearings and provide a general counselling service to applicants relative to their claims under the Pension Act. No charge is made for the services of the Bureau. During the fiscal year 1972-73 the Bureau of Pensions Advocates submitted 10,227 claims to adjudicating bodies. Of these, 6.7% related to World War I service, 69.3% related to World War II service, 3.8% to Special Force (Korea), 16.7% to Regular Force in peacetime, and 2.5% to Special Duty Area Service. Adjudication of disability claims for RCMP service and other service such as Reserve Force and Civilian War Service accounted for less than 1%. Of the 7,552 decisions rendered by adjudicating bodies on Bureau claims during this period, 39.6% were wholly or partially favourable to the applicant.

6.7.2 Welfare and treatment services

6.7.2.1 Welfare services

Welfare services for veterans and, where appropriate, their dependents are provided by the Welfare Services Branch. These include the administration of assigned statutes; the conducting of field work and reporting for other branches of the Department, and the Canadian Pension Commission, the War Veterans Allowance Board and Services Benevolent Funds; and the provision of a rehabilitation and welfare program of advice and counselling including referral, where indicated, to other public or private agencies, veterans organizations, etc.

Assistance fund. Recipients of benefits under the War Veterans Allowance Act and Part XI of the Civilian War Pensions and Allowances Act living in Canada may be given help from the assistance fund if their total income is lower than the permitted maximum. Assistance may take the form of a monthly supplement based on shelter, fuel, food, clothing, personal care and specified health costs or of a single award to meet an unusual or emergency need. The number of persons assisted in the year ended March 31, 1973 was 22,353, the number in receipt of monthly supplements at the end of 1972 was 18,745 and fund expenditures to March 31, 1973, amounted to \$9.1 million.

Education assistance to children. The Children of War Dead (Education Assistance) Act provides help in the form of allowances and the payment of fees for the post-secondary education of children of persons whose deaths have been attributed to military service. Assistance is restricted to children attending, in Canada, educational institutions that require secondary school graduation, matriculation or equivalent standing for admission, including, in addition to universities and colleges, such facilities as hospital schools of teaching and institutes of technology. From its inception in July 1953 to March 31, 1973, expenditures totalled \$11.9 million of which \$6.6 million was spent in allowances and \$5.3 million in fees. By the end of March 1973, training had been approved for 6,191 children of Canada's war dead; of these, 2,732 had successfully completed training. At the same date, there were 852 students in university and non-university courses receiving assistance.

Veterans insurance. Under the terms of the Returned Soldiers Insurance Act (SC 1920, c.54 as amended), any one veteran of World War I became eligible to contract for life insurance with the federal government for a maximum of \$5,000. No policies have been issued under this Act since August 31, 1933. During the eight years in which the Act was open, 48,319 policies with a face value of \$109.3 million were issued. On December 31, 1973, 3,111 policies with a value of \$6.8 million were still in force.

The Veterans Insurance Act (RSC 1970, c.V-3) made life insurance up to a maximum of \$10,000 available to veterans of World War II on their discharge as well as to widows of those who died during that war. The Veterans Benefit Act of 1954 extended this eligibility to veterans with active service in Korea. The period of eligibility to apply for this insurance ended October 31, 1968. By that date 56,148 policies amounting to \$185.1 million had been issued and, of these, 20,785 policies with a value of \$66.7 million were still in force on December 31, 1973.

Rehabilitation and welfare. Welfare officers at district offices work closely with other branches of the Department, with other public agencies at all levels and with private agencies and organizations in assisting veterans and their dependents to deal with problems of social adjustment, particularly those associated with physical disabilities or the disabilities of increasing age. The latter occur more frequently, of course, as the age of the veteran population increases. A program of university, vocational, technical and home training with allowances, is provided for disabled pensioned veterans and vocational rehabilitation is also promoted by training assistance. Sheltered workshops at Toronto and Montreal and home assembly work in other centres produce poppies and memorial wreaths associated with Remembrance Day observances.

Services benevolent and welfare funds. Veterans and their dependents receive considerable assistance through various services benevolent funds. All of these organizations work closely together and in co-operation with the Department of Veterans Affairs and veterans organizations. In addition to providing cash grants or loans as detailed below, all organizations for serving or ex-service personnel carry out increasingly heavy counselling work, particularly in the field of debt consolidation and management.

The oldest of the services funds, the Royal Canadian Navy Benevolent Fund, was incorporated in 1942 and derived its original capital from undistributed prize monies accrued during World War I. In the year ended March 31, 1973, it approved 384 applications for loans or grants totalling \$185,913. The Royal Canadian Air Force Benevolent Fund was established in 1944 using assets from disbanded units of the Commonwealth Air Training Plan. Loans or grants totalling \$296,983 were made in 1,087 cases during the year ended March 31, 1972. The Army Benevolent Fund was set up by Act of Parliament in 1947 and is administered by a Board appointed by the Governor in Council. It is the only one of the Funds required to report annually to Parliament (through the Minister of Veterans Affairs). Capital for this Fund was derived from army canteen and mess funds accumulated during World War II. No provision was made in its charter for loan assistance and it is further restricted in that its operations extend only to persons who were on active service in the Canadian Army during World War II and their dependents. During the year ended March 31, 1973, 3,888 cases received \$432,843 in grants under its Veterans Welfare Programme.

In 1950 the Canadian Army Welfare Fund was incorporated to make assistance available to personnel (and their dependents) enlisting in the Army after World War II and who were thus ineligible for help under the three existing Funds. While addressing itself primarily to the

small-loan field for serving personnel, an amount of \$50,000 is set aside annually for distress grants. Following unification of the Forces, and because of a variety of legal complications precluding amalgamation of the existing Funds, a fifth, the Canadian Forces Personnel Assistance Fund, was incorporated. Its primary role at the present time is in the field of small low-cost loans for serving personnel enlisting after February 1968. The grant and financial distress loan aspects of this program are expected to take on increasing importance as the years pass. Administration of the two last-named Funds is carried out on contract through the office of the Army Benevolent Fund Board.

6.7.2.2 Treatment services

The Treatment Services Branch of the Department of Veterans Affairs provides medical and dental services for entitled veterans throughout Canada as well as for members of the Armed Forces, the Royal Canadian Mounted Police and the wards of other governments or departments at the request and expense of the authorities concerned. Prosthetic services are provided to entitled veterans by the Department of National Health and Welfare but paid for by the Department of Veterans Affairs (DVA). The Branch provides examination and treatment for pensionable disabilities and provides treatment to war veterans allowance recipients (but not to their dependents) and veterans whose service and financial circumstances render them eligible for free treatment or at a cost adjusted to their ability to pay. If a bed is available, any veteran may receive treatment in a departmental hospital on a guarantee of payment of the cost of hospitalization. The pensioner receives treatment for his pensionable disabilities regardless of his place of residence but service to other veterans is available in Canada only. Subject to the approval of the Department, an eligible veteran may also obtain treatment at the expense of the Department in an outside hospital from a doctor of his choice. Domiciliary care may be provided to eligible veterans in departmental facilities where the need for acute or chronic treatment is sufficiently light, provided that excess beds are available.

Under the federal-provincial hospital insurance program, DVA hospitals are recognized for the provision of insured services to veterans. Where treatment is given for a non-pensioned condition at a DVA hospital to a veteran, or elsewhere to a veteran eligible under the veterans treatment regulations, the hospitalization is an insured service under the federal-provincial hospital insurance program and his medical care is an insured service under the federal-provincial medical care insurance program. The Department pays premiums where required on behalf of veterans who are eligible for war veterans allowance.

Hospital facilities. Treatment is provided in eight active treatment hospitals located at Halifax, NS; Montreal and Ste. Anne de Bellevue, Que.; London, Ont.; Winnipeg, Man.; Calgary, Alta.; and Vancouver and Victoria, BC; and in three domiciliary care homes at Ottawa, Ont., Saskatoon, Sask. and Edmonton, Alta. The rated bed capacity of these institutions at December 31, 1973 was 5,881 beds. It should also be noted that in Ottawa both acute and chronic cases requiring definitive treatment are admitted to the National Defence Medical Centre. A veterans pavilion of 82 beds is located at St. John's General Hospital, St. John's, Nfld., 1,200 beds are available at Sunnybrook Hospital in Toronto, 150 beds at the Centre Hospitalier de l'Université Laval in Quebec and 200 beds at West Saint John Community Hospital in Saint John, NB, for the priority use of veterans, as well as some 766 beds in community hospitals located in St. John's, Nfld., Charlottetown, PEI, Kingston and Thunder Bay, Ont., Regina and Saskatoon, Sask. and Edmonton, Alta.

Medical staff and training programs. The active and consulting medical staffs of departmental hospitals are usually private practitioners and specialists who also hold teaching appointments on the medical faculties of local universities. Their appointment and selection is normally recommended by the Deans of Medicine of the universities with which the departmental hospitals are affiliated. This affiliation results in approval by the Royal College of Physicians and Surgeons of Canada for postgraduate teaching in resident teaching programs of non-core years in medicine, surgery, psychiatry and other specialties. Some departmental hospitals are also affiliated with technical schools and act as hospital teaching units in technical school programs for paramedical sciences such as laboratory and radiology technicians. In addition, residency training programs are given in psychology, dietetics, physiotherapy and occupational therapy, and in the medical social services at both the undergraduate and graduate levels. A postgraduate residency program in hospital pharmacology and pharmacy methodology is con-

ducted at Westminster Hospital, London, Ont. At Camp Hill Hospital in Halifax, Shaughnessy Hospital in Vancouver, Deer Lodge in Winnipeg and Westminster Hospital in London, the Department is affiliated with the university medical school in the undergraduate clinical teaching program, in addition to participating in graduate residency training.

6.7.3 Land settlement and house construction

The Veterans' Land Act, 1942, as amended, provides financial, technical and supervisory assistance to World War II and Korean Force veterans, to enable them to engage in agriculture or commercial fishing on a full-time basis; to acquire, build or improve homes; and to settle on provincial, federal and Indian reserve land. Loans may be made up to \$40,000 for full-time farmers on economic farm units, to \$18,000 for small family farmers, to \$16,000 for small holders (part-time farmers) and to \$18,000 for veterans building houses on city-sized lots. The financial assistance available under the Act is generally comparable to that available to non-veterans under the Farm Credit Act and the National Housing Act.

From inception of the Act to December 31, 1973, 133,353 veterans were settled under the provisions of the Act; 31,526 were established as full-time farmers, 88,585 as small holders, 5,690 as Crown land settlers, 1,433 as commercial fishermen, 1,782 Indian veterans were established on reservations and 4,337 veterans acted as their own contractors in building homes on city-sized lots. Subsequent to settlement, 19,909 farmers and 20,083 small holders and commercial fishermen were given additional loans. In 1973, loans amounting to over \$56,592,788 were approved on behalf of 3,750 veterans. From inception of operations to the end of 1973, \$1,203,017,652 was spent on repayable loans, advances and non-repayable grants and 70,476 veterans had earned conditional grants of \$125,297,713. By the end of that year, 57,053 of them had successfully completed their settlement contracts — 18,284 farmers, 31,619 small holders, 726 commercial fishermen, 4,760 Crown land settlers, and 1,664 Indian veterans on reservations.

Field officers, highly trained in techniques pertaining to agriculture, construction and land appraisals provide advisory, supervisory and appraisal services. During 1973, 4,746 properties were appraised, including 197 under the Indian Off-Reserve and Eskimo Housing Program and 26 special assignments carried out on behalf of other government departments and agencies. Altogether, 559 new homes were started — 547 for small holders and commercial fishermen, 12 farm homes — and 553 new houses were completed. During the calendar year 1973 field officers appraised more than 41,000 properties for the Department of National Revenue. During the fiscal year, 1972-73, instalments falling due on properties purchased by veterans under the Act amounted to \$40,553,927, excluding share-of-crop payments; over 94.4% of the total amount due was collected and 741 veterans under share-of-crop agreements paid \$1,900,133. By December 31, 1973, 19,356 veterans were insured under the Veterans' Land Act Group Life Insurance for almost \$195,510,000. Since inception of the group plan, 458 insured veterans died and \$3,415,734 was paid to retire their indebtedness.

6.7.4 Commonwealth War Graves Commission

The current Charters of the Commonwealth War Graves Commission consist of two documents — the Original Charter of Incorporation dated May 21, 1917, and the new Supplemental Charter dated June 8, 1964. Under these Charters the Commission is entrusted with the marking and maintenance in perpetuity of the graves of those of the British Empire and Commonwealth Armed Forces who lost their lives between August 4, 1914, and August 31, 1921, and between September 3, 1939, and December 31, 1947, and with the erection of memorials to commemorate those with no known grave. The Canadian High Commissioner in London, England, is the official Commission member for Canada and the Minister of Veterans Affairs is the Agent of the Commission in Canada. The office of the Secretary-General of the Canadian Agency is in the Veterans Affairs Building, Ottawa.

Sources

- 6.1 - 6.2 Consumer Income and Expenditure Division, Household Statistics Branch, Statistics Canada.
- 6.3 - 6.6 Program Information and Documentation Division, Policy and Program Development and Coordination Branch, Welfare, Department of National Health and Welfare.
- 6.7 Public Relations, Department of Veterans Affairs.

Tables

..	not available	e	estimate
...	not appropriate or not applicable	p	preliminary
--	nil or zero	r	revised
--	too small to be expressed	certain tables may not add due to rounding	

6.1 Average income of families in current and constant dollars by region, selected years, 1951-71

Region	1951	1957	1961	1967	1971
<i>Current dollars</i>					
Atlantic Provinces	2,515	3,422	4,156	5,767	7,936
Quebec	3,523	4,517	5,294	7,404	9,919
Ontario	3,903	4,997	5,773	8,438	11,483
Prairie Provinces	3,261	4,355	4,836	6,908	9,309
British Columbia	3,669	5,238	5,491	7,829	11,212
Canada	3,535	4,644	5,317	7,602	10,368
<i>Constant (1961) dollars</i>					
Atlantic Provinces	2,858	3,629	4,156	4,997	5,949
Quebec	4,003	4,790	5,294	6,416	7,436
Ontario	4,435	5,299	5,773	7,312	8,608
Prairie Provinces	3,706	4,618	4,836	5,986	6,978
British Columbia	4,169	5,555	5,491	6,784	8,405
Canada	4,016	4,922	5,317	6,591	7,776

6.2 Average income of families in each region as a percentage of the average for Canada, 1951, 1961 and 1971

Region	1951	1961	1971
Atlantic Provinces	71.1	78.2	76.5
Quebec	99.7	99.6	95.7
Ontario	110.4	108.6	110.8
Prairie Provinces	92.2	91.0	89.8
British Columbia	103.8	103.3	108.1
Canada	100.0	100.0	100.0

6.3 Percentage distribution of families in constant (1961) dollars, showing average and median incomes, selected years, 1951-71

Income group in constant (1961) dollars	1951	1957	1961	1967	1971
Under \$1,000	6.3	3.6	3.3	2.2	2.6
\$ 1,000-\$1,999	12.5	10.2	7.9	5.4	4.7
2,000- 2,999	19.2	13.0	10.8	8.8	7.9
3,000- 3,999	23.2	16.7	13.7	9.8	7.2
4,000- 4,999	16.2	17.5	16.6	11.7	8.1
5,000- 5,999	8.4	13.1	15.0	13.0	9.0
6,000- 6,999	5.4	8.4	11.3	11.9	10.4
7,000- 9,999	6.0	12.2	14.9	22.7	26.3
10,000 and over	2.8	5.3	6.5	14.5	23.8
Total	100.0	100.0	100.0	100.0	100.0
Average income	\$ 4,016	4,922	5,317	6,591	7,776
Median income	\$ 3,517	4,371	4,866	5,936	7,005

Median income refers to the middle or central value when incomes are ranged in order of magnitude. Median income is lower than average income in these tables since it is not as affected by a few abnormally large values in the distribution.

6.4 Percentage distribution of families by major source of income within income quintiles, selected years, 1951-71

Major source of income within quintiles ^a	1951	1957	1961	1967	1971
Lowest quintile					
No income ^a	2.0	2.5	2.4	1.6	1.6
Wages and salaries	48.2	49.2	46.3	36.3	33.6
Net income from self-employment	10.5	10.9	9.1	19.2	11.8
Transfer payments	26.6	30.9	34.6	35.9	46.2
Investment income	7.0	3.2	3.4	3.0	3.3
Miscellaneous income	5.7	3.1	4.2	4.1	3.4
Second-lowest quintile					
Wages and salaries	85.5	85.5	83.5	80.8	81.0
Net income from self-employment	10.7	9.7	11.6	10.0	7.6
Transfer payments	1.1	2.3	1.8	4.1	4.9
Investment income	1.7	0.9	1.0	2.1	2.6
Miscellaneous income	1.0	1.6	2.0	3.0	3.9

6.4 Percentage distribution of families by major source of income within income quintiles, selected years, 1951-71 (concluded)

Major sources of income within quintiles ¹	1951	1957	1961	1967	1971
Middle quintile					
Wages and salaries	91.8	91.6	91.3	92.0	93.1
Net income from self-employment	7.2	7.5	7.0	6.0	3.9
Transfer payments	0.3	0.2	0.3	0.7	0.3
Investment income	0.5	0.5	1.0	0.7	1.3
Miscellaneous income	0.2	0.1	0.5	0.7	1.4
Second-highest quintile					
Wages and salaries	92.4	92.0	92.1	93.8	94.7
Net income from self-employment	6.9	6.7	6.2	4.5	2.8
Transfer payments	--	0.4	0.1	0.3	0.2
Investment income	0.5	0.4	1.2	0.8	1.4
Miscellaneous income	0.3	0.6	0.5	0.6	0.9
Highest quintile					
Wages and salaries	85.9	84.6	86.8	89.1	91.2
Net income from self-employment	11.6	13.1	10.9	8.9	5.6
Transfer payments	--	--	--	--	0.1
Investment income	2.1	1.9	1.7	1.8	2.1
Miscellaneous income	0.4	0.4	0.6	0.2	0.9
All families					
No income ²	0.4	0.5	0.5	0.3	0.3
Wages and salaries	80.8	80.7	80.0	78.4	78.7
Net income from self-employment	9.4	9.6	9.0	9.7	6.3
Transfer payments	5.6	6.7	7.3	8.2	10.3
Investment income	2.3	1.4	1.7	1.7	2.2
Miscellaneous income	1.5	1.2	1.6	1.7	2.1
Total	100.0	100.0	100.0	100.0	100.0

¹Families are arranged in ascending order of size of total income and then divided into five equal groups, or quintiles.

²These are families who either immigrated in the survey year so that they had no income from Canadian sources in the previous year or were formed during the survey year and had no cash income of their own in the previous year.

6.5 Percentage distribution of families by income group, by province, 1971

Income group	Nfld.	PEI	NS	NB	Que.	Ont.	Man.	Sask.	Alta.	BC	Canada
Under \$1,000	1.8	1.9	1.6	1.9	2.3	2.0	2.0	3.3	3.2	1.5	2.2
\$ 1,000-\$ 1,999	5.4	3.9	2.6	3.8	2.4	1.8	3.6	5.7	2.9	1.8	2.5
2,000- 2,999	7.2	11.1	6.1	5.9	4.4	3.2	5.1	7.8	5.1	3.7	4.3
3,000- 3,999	12.3	13.9	10.7	9.3	6.5	4.1	8.2	11.0	6.3	6.7	6.3
4,000- 4,999	9.6	13.0	9.4	9.2	6.1	3.6	5.5	7.2	5.1	4.1	5.2
5,000- 5,999	9.5	8.7	9.1	8.1	6.4	5.2	8.2	8.5	5.3	4.3	6.0
6,000- 6,999	7.7	8.2	8.0	8.0	7.8	4.9	7.3	7.2	6.5	4.5	6.2
7,000- 7,999	8.8	6.9	8.7	9.4	8.1	5.9	7.5	8.0	6.1	6.0	6.9
8,000- 8,999	7.5	8.1	7.7	8.5	8.5	7.5	8.3	7.1	7.3	8.5	7.9
9,000- 9,999	6.2	9.0	7.3	6.2	7.5	7.4	6.7	5.9	7.2	6.9	7.2
10,000- 11,999	10.0	6.9	11.3	10.7	13.1	15.6	12.4	10.7	12.7	16.1	14.0
12,000- 14,999	7.7	4.8	9.2	9.3	12.0	16.9	13.6	9.1	15.6	16.2	14.2
15,000- 24,999	5.3	3.1	7.2	8.8	12.1	18.1	9.7	7.6	14.1	16.5	14.2
25,000 and over	1.2	0.4	1.2	0.9	2.7	3.6	1.8	0.9	2.7	3.4	2.9
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Average income \$	7,470	6,750	8,132	8,239	9,919	11,483	9,216	7,776	10,221	11,212	10,368
Median income \$	6,556	5,491	7,295	7,405	8,706	10,546	8,310	6,886	9,332	10,269	9,347
Sample size	No.	1,161	244	1,694	1,259	3,848	4,814	1,089	1,191	1,723	19,011
Estimated families	'000	104	23	177	137	1,378	1,902	238	216	388	5,107

6.6 Percentage distribution of families by income group, age and sex of head, 1971

Income group	Age group							
	Under 25	25-34	35-44	45-54	55-64	65-69	70 and over	Total
Families with male heads								
Under \$1,000	2.2	1.9	1.4	1.6	2.2	1.6	0.4	1.7
\$ 1,000-\$ 1,999	2.2	0.8	1.0	1.5	3.4	6.3	6.3	2.1
2,000- 2,999	2.6	1.9	1.9	2.4	4.6	9.4	11.9	3.4
3,000- 3,999	4.9	2.8	2.9	2.4	4.7	14.6	35.1	5.8
4,000- 4,999	7.8	3.9	3.7	3.5	5.5	7.9	10.5	4.9
5,000- 5,999	8.8	5.7	4.5	4.9	5.9	8.5	7.7	5.8
6,000- 6,999	11.3	6.3	5.5	4.9	6.0	9.3	5.2	6.2
7,000- 7,999	9.9	7.6	7.0	6.0	7.3	6.6	3.6	6.9
8,000- 8,999	10.3	11.1	7.9	7.3	6.7	6.7	2.9	8.1
9,000- 9,999	10.5	9.1	7.5	6.6	6.9	3.5	3.5	7.4

6.6 Percentage distribution of families by income group, age and sex of head, 1971 (concluded)

Percentage distribution of families by income group and age group									
Income group		Age group						Total	
		Under 25	25-34	35-44	45-54	55-64	65-69		70 and over
Families with male heads (concluded)									
\$10,000-\$11,999		15.6	17.6	16.1	15.0	13.2	7.2	4.2	14.6
12,000- 14,999		9.4	17.3	19.3	16.6	12.9	7.2	3.0	15.1
15,000- 24,999		4.3	12.4	17.8	22.7	15.7	8.8	4.5	15.1
25,000 and over		0.1	1.6	3.4	4.5	4.8	2.2	1.4	3.0
Total		100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Average income \$		8,248	10,435	11,895	12,361	11,183	7,901	5,808	10,727
Median income \$		8,028	9,875	10,832	11,180	9,510	6,176	3,843	9,698
Sample size No.		1,120	4,019	3,998	3,528	2,647	965	1,329	17,606
Estimated families '000		307	1,106	1,126	971	683	237	297	4,727
Families with female heads									
Under \$1,000			17.5	8.9	4.9	5.5	2.5		8.0
\$ 1,000-\$ 1,999			10.7	3.4	7.1	6.9	7.4		7.3
2,000- 2,999			24.4	13.3	13.0	13.4	10.0		15.0
3,000- 3,999			12.6	16.2	9.2	11.3	11.7		12.1
4,000- 4,999			7.9	11.9	9.6	10.0	9.3		9.6
5,000- 5,999			10.8	8.7	8.6	6.7	7.8		8.7
6,000- 6,999			3.9	7.6	8.0	8.5	7.5		7.0
7,000- 7,999			2.6	10.3	7.1	8.0	8.3		7.1
8,000- 8,999			3.2	2.3	9.6	5.1	7.1		5.6
9,000- 9,999			1.9	6.1	5.0	5.9	8.1		5.3
10,000- 11,999			2.8	6.5	6.7	8.1	7.5		6.2
12,000- 14,999			0.7	2.2	5.8	5.7	4.1		3.6
15,000- 24,999			1.1	2.5	4.5	5.0	6.4		3.9
25,000 and over			0.0	0.3	0.7	0.0	2.4		0.7
Total			100.0	100.0	100.0	100.0	100.0		100.0
Average income \$			3,668	5,564	6,660	6,264	7,445		5,901
Median income \$			2,886	4,705	5,621	5,353	6,169		4,768
Sample size No.			303	255	312	233	302		1,405
Estimated families '000			86	71	80	58	86		380

6.7 Percentage distribution of families by income group and education of head, 1971

Income group	Elementary schooling		Secondary schooling		Post-secondary (non-university)		University	
	0-4 years	5-8 years	Some	Completed	Some	Completed	Some	Degree
Under \$ 1,000	2.6	2.7	2.3	1.7	2.7	0.9	1.1	1.3
\$ 1,000-\$ 1,999	8.4	3.8	1.8	1.2	1.6	0.7	0.8	0.4
2,000- 2,999	12.4	6.5	3.6	2.2	1.8	1.0	1.6	1.0
3,000- 3,999	17.8	9.3	5.3	3.5	2.7	2.3	2.0	1.1
4,000- 4,999	10.4	7.4	5.0	3.5	2.8	2.2	2.3	1.6
5,000- 5,999	7.5	7.9	6.2	4.8	4.7	4.4	4.7	1.5
6,000- 6,999	7.7	7.9	6.7	5.3	4.4	5.3	3.5	2.0
7,000- 7,999	4.9	8.5	7.3	6.7	6.5	7.2	5.1	2.5
8,000- 8,999	6.0	7.8	8.7	9.4	10.4	8.5	5.8	4.0
9,000- 9,999	5.2	6.7	8.5	7.8	6.8	9.7	5.3	4.7
10,000- 11,999	5.6	12.5	15.5	16.7	16.6	17.2	16.9	9.9
12,000- 14,999	5.5	9.4	15.2	18.5	19.3	21.5	18.8	17.8
15,000- 24,999	5.3	8.9	12.4	16.6	16.4	17.9	25.4	34.2
25,000 and over	0.9	0.9	1.5	2.0	3.3	1.2	6.7	18.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Average income \$	6,420	8,276	9,895	11,147	11,474	11,346	13,437	19,002
Median income \$	4,849	7,535	9,362	10,460	10,687	10,912	12,143	15,660
Sample size No.	1,480	5,859	5,469	2,758	497	872	840	1,236
Estimated families '000	307	1,503	1,463	821	148	240	250	375

6.8 Percentage distribution of families¹ by income group, family type, and combination of income recipients, Canada, 1971

Income group	Income recipient ²				
	Husband-wife families			All other families	
	Head only	Head and wife only	Head, wife, and other family members ³	Head only	Head and other family members ³
Under \$1,000	2.8	0.7	0.6	13.3	1.6
\$ 1,000-\$ 1,999	3.2	1.6	0.7	12.8	4.0
2,000- 2,999	4.8	3.3	1.4	23.6	7.9
3,000- 3,999	5.8	7.7	2.3	12.6	11.2
4,000- 4,999	6.4	4.3	3.2	9.7	9.7
5,000- 5,999	7.8	5.5	3.5	7.7	7.9
6,000- 6,999	8.9	5.1	4.1	4.4	8.2
7,000- 7,999	9.5	5.8	5.2	5.5	7.5

6.8 Percentage distribution of families¹ by income group, family type, and combination of income recipients, Canada, 1971 (concluded)

Income group	Income recipient ²			All other families	
	Husband-wife families		Head, wife, and other family members ³	Head only	Head and other family members ³
	Head only	Head and wife only			
\$ 8,000-\$ 8,999	10.4	7.6	6.0	2.4	7.8
9,000- 9,999	8.4	7.4	6.1	1.9	7.1
10,000- 11,999	13.1	16.6	14.1	2.2	10.1
12,000- 14,999	10.7	17.3	18.2	1.8	7.6
15,000- 24,999	6.4	14.7	28.2	1.6	8.4
25,000 and over	1.6	2.3	6.4	0.4	1.1
Total	100.0	100.0	100.0	100.0	100.0
Average income \$	8,687	10,846	13,755	4,133	8,004
Median income \$	8,071	10,112	12,458	3,025	6,959
Sample size No.	6,047	6,595	4,375	607	1,242
Estimated families '000	1,594	1,838	1,147	166	321

¹Excludes 16,000 families who received no cash income in 1971 (see footnote 2 to Table 6.4).

²Data not shown for income recipient group "Other than head only" due to the small number of cases in the sample.

³"Other family members" refers to any income of children or other relatives.

6.9 Patterns of expenditure for families of two or more persons, based on surveys of eight Canadian cities, 1969 and 1972

Item	1969	1972	Item	1969	1972
Family characteristics			Percentage of total expenditure (concluded)		
Average			Household operation	4.1	3.7
Family size No.	3.63	3.48	Furnishings and equipment	4.6	4.6
Children under 5	0.34	0.30	Household appliances	1.0	1.0
Children 5-15	0.91	0.79	Other	3.6	3.6
Children 16-17	0.14	0.14	Clothing	8.1	7.4
Adults 18-64	2.09	2.10	Personal care	2.1	1.9
Adults 65 and over	0.21	0.21	Medical and health care	3.2	2.6
Full-time earners	1.01	1.00	Smoking and alcoholic beverages	3.6	3.7
Age of head yr	44.0	44.1	Travel and transportation	12.2	12.1
Net income before taxes \$	10,560	12,549	Automobile (and truck)	9.6	9.5
Other money receipts \$	216	246	Purchase	4.4	4.3
Net change in assets and liabilities \$	332	571	Operation	5.2	5.1
Percentage			Other	2.5	2.6
Home-owners	55.0	53.9	Recreation	3.5	3.6
Car or truck owners	77.9	75.6	Reading	0.6	0.6
Wife employed full-time	16.4	18.4	Education	1.0	1.0
Average total expenditure \$	10,539	12,154	Miscellaneous expenses	1.4	1.8
Percentage of total expenditure			Total current consumption	77.4	75.7
Food	17.5	17.1	Personal taxes	15.6	17.6
Shelter	15.6	15.6	Security	4.7	4.7
Rented living quarters	5.7	6.0	Gifts and contributions	2.3	2.1
Owned living quarters	6.5	6.4	Total expenditure	100.0	100.0
Other housing	0.9	0.7			
Water and fuel	2.6	2.5			

6.10 Patterns of expenditure for families of two or more persons, by family income quintiles¹, based on survey of eight Canadian cities, 1972

Item		Lowest quintile	Second-lowest quintile	Middle quintile	Second-highest quintile	Highest quintile
Family characteristics						
Average						
Family size No.	2.80	3.30	3.51	3.74	4.07	
Children under 5	0.26	0.36	0.36	0.31	0.20	
Children 5-15	0.55	0.74	0.84	0.92	0.90	
Children 16-17	0.10	0.11	0.12	0.16	0.23	
Adults 18-64	1.41	2.00	2.15	2.28	2.66	
Adults 65 and over	0.54	0.15	0.11	0.11	0.13	
Full-time earners	0.32	0.85	1.07	1.25	1.53	
Age of head yr	49.6	43.4	41.1	41.5	45.0	
Net income before taxes \$	5,035	8,881	11,594	14,541	22,696	
Other money receipts \$	323	190	195	227	296	
Net change in assets and liabilities \$	-305	-7	207	700	2,263	

6.10 Patterns of expenditure for families of two or more persons, by family income quintiles¹, based on survey of eight Canadian cities, 1972 (concluded)

Item		Lowest quintile	Second- lowest quintile	Middle quintile	Second- highest quintile	Highest quintile
Family characteristics (concluded)						
Percentage						
Home-owners		34.2	43.7	55.7	63.4	72.6
Car or truck owners		43.6	68.7	88.2	88.1	89.3
Wife employed full-time		3.9	8.5	17.6	30.2	31.6
Average total expenditure	\$	5,685	9,113	11,543	13,873	20,556
Percentage of total expenditure						
Food		24.3	20.0	17.4	16.4	14.1
Shelter		22.9	18.4	15.9	14.7	12.8
Rented living quarters		13.3	9.1	6.3	4.9	3.0
Owned living quarters		5.0	5.6	6.5	6.8	6.9
Other housing		0.4	0.6	0.5	0.6	1.0
Water and fuel		4.2	3.0	2.5	2.4	1.9
Household operation		4.8	3.8	3.6	3.6	3.5
Furnishings and equipment		3.8	4.3	4.8	4.8	4.6
Household appliances		1.0	1.0	1.1	1.1	0.9
Other		2.8	3.3	3.7	3.7	3.7
Clothing		6.6	7.5	7.2	7.9	7.4
Personal care		2.2	2.1	1.9	1.9	1.7
Medical and health care		3.1	3.0	2.7	2.7	2.3
Smoking and alcoholic beverages		4.9	4.4	3.8	3.5	3.2
Travel and transportation		9.6	11.1	13.8	13.0	11.7
Automobile (and truck)		6.8	8.3	11.3	10.7	8.9
Purchase		2.9	3.1	5.2	5.1	4.3
Operation		3.8	5.2	6.1	5.6	4.6
Other		2.8	2.8	2.5	2.3	2.8
Recreation		3.0	3.8	3.5	3.7	3.7
Reading		0.7	0.6	0.5	0.5	0.5
Education		1.0	0.7	1.0	0.8	1.1
Miscellaneous expenses		2.1	1.9	1.8	1.9	1.5
Total current consumption		89.1	81.5	77.9	75.4	68.3
Personal taxes		6.8	12.7	15.6	17.9	23.5
Security		2.3	3.9	4.7	4.6	5.9
Gifts and contributions		1.9	1.9	1.9	2.0	2.4
Total expenditure		100.0	100.0	100.0	100.0	100.0

¹Weighted survey records of families are arranged in ascending order by size of total income and divided into five equal groups, or quintiles. Thus, each group, or quintile, represents a weighted 20% of families.

6.11 Beneficiaries under the Canada Pension Plan, by type of benefit and by province, March 1973

Province or territory	Retire- ment pensions	Disability benefits		Survivors benefits			Combined pensions	All benefits
		Disability pensions	Children's benefits	Death benefits	Widows pensions	Orphans benefits		
Newfoundland	4,014	648	895	55	1,388	2,041	—	9,050
Prince Edward Island	1,616	178	163	14	409	567	—	2,959
Nova Scotia	11,980	2,612	2,388	140	3,632	4,053	3	24,848
New Brunswick	8,821	1,007	896	89	2,633	3,221	—	16,716
Quebec ¹	1,020	117	99	14	496	586	1	2,341
Ontario	136,962	11,358	6,287	1,392	36,386	29,774	13	223,082
Manitoba	19,411	1,247	545	156	4,332	3,689	4	29,493
Saskatchewan	15,633	931	647	134	3,951	3,691	4	25,054
Alberta	23,417	1,388	789	224	5,851	6,155	5	37,953
British Columbia	41,106	2,293	950	389	9,065	8,054	6	62,054
Yukon Territory	107	3	—	1	56	71	—	240
Northwest Territories	57	6	11	5	42	94	—	215
Canada	264,144	21,788	13,670	2,613	68,241	61,996	36	434,005

¹Benefits are paid to residents of Quebec who contributed partly or wholly to the Canada Pension Plan and who applied for benefits to the Canada Pension Plan. Excludes recipients of benefits under the Quebec Pension Plan.

6.12 Canada Pension Plan account, years ended Mar. 31, 1969-73 (million dollars)

Year	Revenue				Net expenditure			Excess of revenue	Balance in account
	Contri- bution	Interest on invest- ments	Other	Total	Benefits	Adminis- tration	Total		
1969	697.6	84.4	3.0	785.0	15.6	14.5	30.0	755.0	2,107.8
1970	745.6	139.7	4.2	889.6	47.3	17.7	65.1	824.5	2,932.3
1971	812.9	202.7	4.5	1,020.1	89.2	19.5	108.7	911.3	3,843.6
1972	825.9	272.6	3.5	1,102.1	144.4	22.9	167.3	934.9	4,778.5
1973	897.4	341.4	4.7	1,243.4	206.3	22.6	228.9	1,014.5	5,793.0

6.13 Canada Pension Plan Investment Fund investments, by province, years ended Mar. 31, 1967-73 (million dollars)

Securities of or guaranteed by	1967	1968	1969	1970	1971	1972	1973	Total investments 1966-73
Newfoundland	11.0	12.0	14.2	15.6	16.8	17.6	19.0	106.9
Prince Edward Island	1.9	2.3	2.9	3.2	3.5	3.6	3.8	21.3
Nova Scotia	21.4	25.2	29.2	31.6	34.0	35.7	38.6	217.0
New Brunswick	16.7	19.3	21.8	24.2	25.8	26.8	28.8	164.4
Quebec ¹	0.4	1.9	2.4	3.1	5.1	6.6	8.0	27.4
Ontario	332.6	375.9	412.0	445.8	476.0	498.3	536.4	3,097.1
Manitoba	34.9	39.4	42.3	47.7	51.5	53.7	57.4	328.9
Saskatchewan	24.5	29.7	35.9	40.4	42.9	42.7	43.2	260.7
Alberta	51.1	59.2	68.4	77.1	82.3	87.1	94.6	522.8
British Columbia	84.4	96.6	107.5	117.2	125.1	131.2	141.5	808.6
Federal government	1.8	3.8	5.6	4.1	5.4	6.5	7.1	34.5
Total investments	580.7	665.3	742.2	809.9	868.5	910.0	978.3	5,589.6
Balance in Fund	615.5	1,280.8	2,022.9	2,832.7	3,701.3	4,611.3	5,589.6	...

¹The amounts purchased from the Province of Quebec arise out of contributions made to the Canada Pension Plan by members of the Armed Forces and RCMP in that province.

6.14 Old Age Security (OAS) and Guaranteed Income Supplement (GIS) statistics, by province, fiscal year ended Mar. 31, 1973 with totals for 1969-73

Province or territory	OAS recipients in March	OAS pensioners also receiving		Benefits paid during fiscal year		
		Partial GIS	Full GIS	OAS only \$'000	GIS ¹ only \$'000	OAS plus GIS \$'000
Newfoundland	33,441	8,552	19,727	33,147	21,327	54,475
Prince Edward Island	12,647	4,553	5,234	12,412	7,251	19,663
Nova Scotia	74,437	24,389	26,310	73,924	36,756	110,681
New Brunswick	56,088	17,781	21,035	56,704	27,298	84,002
Quebec	434,517	127,337	147,821	429,326	198,702	628,029
Ontario	664,537	201,721	126,643	653,404	227,989	881,393
Manitoba	98,868	34,755	26,162	97,398	43,870	141,268
Saskatchewan	97,358	34,609	25,711	98,047	40,898	138,945
Alberta	122,632	41,119	33,171	122,426	51,410	173,835
British Columbia	212,301	69,459	48,285	208,217	81,521	289,738
Yukon Territory	514	100	230	516	274	791
Northwest Territories	893	132	631	898	629	1,527
Canada	1973	1,808,233	564,507	480,960	1,786,420	2,524,345
	1972	1,762,550 ¹	493,547	480,600	1,679,295	2,205,355
	1971	1,720,128	387,276	473,116	1,627,219	1,907,225
	1970	1,670,639	421,414	391,421	1,467,057	1,730,535
	1969	1,504,862	301,432	473,602	1,296,849	1,541,320

¹Breakdown between "partial" and "full" Guaranteed Income Supplement is not available.

6.15 Family Allowances, by province, fiscal year ended Mar. 31, 1973 with totals for 1969-73

Province or territory	Allowances paid in March		Net total allowances paid during fiscal year \$
	Number of families ¹	Number of children	
Newfoundland	80,818	208,470	16,905,980
Prince Edward Island	15,153	36,897	3,061,520
Nova Scotia	113,327	250,343	20,717,759
New Brunswick	90,924	212,048	17,516,585
Quebec	862,803	1,821,264	152,650,126
Ontario	1,115,575	2,402,949	190,324,304
Manitoba	138,731	310,722	24,433,892
Saskatchewan	123,258	283,134	23,570,422
Alberta	244,886	549,033	44,156,808
British Columbia	314,664	658,431	53,404,513
Yukon Territory	3,103	6,846	549,742
Northwest Territories	6,312	16,607	1,331,643
Canada	1973	3,109,554	548,623,294
	1972	3,063,287	554,407,332
	1971	3,024,423	557,877,821
	1970	2,977,556	560,049,928
	1969	2,937,084	560,186,052

¹Includes children in the care of child-placement agencies, administrators or trustees; each such child is being considered the sole member of a family of one.

6.16 Youth Allowances, by province, fiscal year ended Mar. 31, 1973 with totals for 1969-73

Province or territory	Youths for whom allowances paid in March	Net total allowances paid during fiscal year \$
Newfoundland	18,405	2,063,258
Prince Edward Island	3,908	450,358
Nova Scotia	27,605	3,204,779
New Brunswick	23,626	2,740,586
Quebec	1	1
Ontario	248,745	28,778,056
Manitoba	31,972	3,698,891
Saskatchewan	32,874	3,802,380
Alberta	56,015	6,426,151
British Columbia	69,518	7,925,451
Yukon Territory	407	45,380
Northwest Territories	639	74,130
Canada		
1973	513,714	59,209,420
1972	516,253	59,651,007 ^a
1971	508,960	58,020,099
1970	484,476	55,101,899
1969	462,385	52,457,273

^aPrior to 1974, Youth Allowances were not provided by the federal government in Quebec. Quebec paid \$23.6 million under its own Schooling Allowances Program during the fiscal year ended 1973. Compensation to Quebec is made under the terms of the Established Programs (Interim Arrangements) Act. The totals shown for Canada do not include these sums.

6.17 Number of projects approved and expenditure for the New Horizons Program, by province, fiscal years ended Mar. 31, 1973 and 1974

Province or territory	1973		1974	
	Number of projects	Expenditure \$	Number of projects	Expenditure \$
Newfoundland	9	44,580	24	159,790
Prince Edward Island	10	27,106	16	53,479
Nova Scotia	18	173,646	31	364,399
New Brunswick	29	138,522	51	281,273
Quebec	126	522,820	393	2,038,887
Ontario	137	600,501	548	3,151,718
Manitoba	31	133,880	122	484,183
Saskatchewan	33	118,128	137	457,345
Alberta	36	139,297	103	609,346
British Columbia	62	237,528	186	1,007,127
Yukon Territory and Northwest Territories	2	9,136	3	17,880
Canada	493	2,145,144	1,614	8,625,427

6.18 Canada Assistance Plan: recipients of social allowances, by province, March 1973

Province and program	Cases				Depen- dents	Total recip- ients ^a
	Single persons	Family heads	Unclassi- fied	Total ¹		
NEWFOUNDLAND	8,156	14,105	—	22,261	48,651	70,912
Long term	6,130	9,446	—	15,576	29,255	44,831
Short term	2,026	4,659	—	6,685	19,396	26,081
PRINCE EDWARD ISLAND	1,511	1,428	—	2,939	4,299	7,238
NOVA SCOTIA	13,536	10,139	—	23,675	27,228	50,903
Provincial	8,746	5,489	—	14,235	14,607	28,842
Municipal	4,790	4,650	—	9,440	12,621	22,061
NEW BRUNSWICK	6,161	11,448	—	17,609	40,966	58,575
Cash	5,308	8,848	—	14,156	30,614	44,770
Voucher	853	2,600	—	3,453	10,352	13,805
QUEBEC	—	—	175,016	175,016	231,436	406,452
ONTARIO	72,288	70,759	—	143,047	164,833	307,880
Family benefits (provincial)	36,908	45,818	—	82,726	107,770	190,496
General welfare (municipal)	35,380	24,941	—	60,321	57,063	117,384
MANITOBA	3,075	2,231	26,335	31,641	38,786	70,427
Long term	—	—	26,335	26,335	31,602	57,937
Short term	3,075	2,231	—	5,306	7,184	12,490
SASKATCHEWAN	15,000	10,255	—	25,255	31,473	56,728
ALBERTA	13,875	19,683	—	33,558	51,898	85,456
Provincial	12,881	18,105	—	30,986	47,344	78,330
Municipal	994	1,578	—	2,572	4,554	7,126
BRITISH COLUMBIA	25,038	22,508	—	47,546	56,443	103,989
Total	158,640	162,556	201,351	522,547	696,013	1,218,560

¹Includes some individuals in institutions in some provinces.

^aIncludes dependents; there is some duplication where recipients receive benefits under more than one program.

6.19 Federal share of Canada Assistance Plan costs¹, by province, fiscal years ended Mar. 31, 1972 and 1973 (dollars)

Province	1971-72	1972-73	Province or territory	1971-72	1972-73
Newfoundland	25,558,567	26,016,332	Manitoba	36,304,036	36,203,999
Prince Edward Island	4,040,832	4,397,708	Saskatchewan	25,306,573	29,102,710
Nova Scotia	21,857,283	22,194,797	Alberta	42,808,250	53,049,073
New Brunswick	20,228,516	22,943,728	British Columbia	68,563,426	69,979,465
Quebec	^a	504,640 ^a	Yukon Territory	295,782	696,696
Ontario	211,035,023	210,492,432	Total	455,998,288	475,581,580

¹Includes payments made for claims received during the fiscal year for expenditures made in the previous fiscal year.

^aCompensation to Quebec is made primarily under the terms of the Established Programs (Interim Arrangements) Act. In 1971-72 and 1972-73 these payments amounted to \$270.1 million and \$293.2 million, respectively. The totals do not include these sums.

6.20 Blind and Disabled Persons Allowances, by province, fiscal year ended Mar. 31, 1973

Province or territory	Allowances for the blind		Allowances for the disabled	
	Recipients in month of March	Federal contribution during year \$	Recipients in month of March	Federal contribution during year \$
Newfoundland	310	217,636	28	10,273
Prince Edward Island	47	31,927	5	2,697
Nova Scotia	435	294,797	280	129,734
New Brunswick	364	250,405	1,824	837,581
Quebec	480	352,879 ¹	1,472	801,250 ¹
Ontario	99	36,600	233	99,022
Manitoba	134	83,165	267	120,880
Saskatchewan	36	24,767	59	26,438
Alberta	190	130,533	1,281	579,591
British Columbia	429	278,296	2,722	1,164,965
Yukon Territory	4	3,037	5	2,250
Northwest Territories	29	19,284	37	15,658
Canada	2,557	1,723,326	8,213	3,790,339

¹Compensation to Quebec is made under the terms of the Established Programs (Interim Arrangements) Act.

6.21 Public expenditure on social security and welfare, fiscal years ended Mar. 31, 1972 and 1973 (current dollars)

Level of government	1972		1973	
	Total \$'000	Per capita \$	Total \$'000	Per capita \$
Municipal	140,500	6.50	193,621	8.80
Provincial	1,433,000	65.90	1,351,619	61.50
Federal	5,413,187	249.10	7,077,067	321.90
Total	6,986,687	321.50	8,622,307	392.20

6.22 Pensions in force under the Pension Act as at Mar. 31, 1973

Service	Disability		Dependent		Total	
	Pensions	Liability \$	* Pensions	Liability \$	Pensions	Liability \$
World War I	18,392	29,009,391	12,016	33,410,359	30,408	62,419,750
World War II	100,175	132,097,083	15,146	37,039,036	115,321	169,136,119
Special Force	2,048	2,385,991	166	383,958	2,214	2,769,949
Regular Force	3,728	3,677,403	666	2,028,881	4,394	5,706,284
Total	124,343	167,169,868	27,994	72,862,234	152,337	240,032,102

Sources

6.1 - 6.10 Consumer Income and Expenditure Division, Household Statistics Branch, Statistics Canada.

6.11 - 6.21 Program Information and Documentation Division, Policy and Program Development and Coordination Branch, Welfare, Department of National Health and Welfare.

6.22 Public Relations, Department of Veterans Affairs.

Chapter 7

Education and the arts

The cost of education in Canada for 1971 has been estimated at \$8,241 million, an amount representing almost 9% of the gross national product (GNP); by comparison, the cost of education in 1960 represented only 4.3% of the GNP. During the 1960s school and university enrolment increased by 50% and staff by 70%, and by 1971, it was estimated that approximately 30% of the entire population of Canada was either receiving or dispensing education.

The necessity of assuring equality of opportunity and of providing diversified programs has led education planners to offer a wide choice of courses at all levels of education. At the secondary level courses now include fine arts, music, drama, urban planning and social geography. Community colleges and vocational institutions provide a widening range of advanced technological and para-professional courses. Universities offer varied interdisciplinary programs at the undergraduate and graduate levels and some have instituted programs of Canadian studies.

At the post-secondary non-university level, several new structures have evolved. The most innovative type of institution that emerged across the country in the 1960s is the community college. In Quebec there are now about 35 colleges of this type, many of them formerly operated by religious communities. They are now known as *collèges d'enseignement général et professionnel* and are commonly referred to as CEGEPs. There are also about 20 private classical colleges in the province, some of which will probably be absorbed into the CEGEP group within the next few years. In Ontario, colleges of applied arts and technology (which incorporated the former institutes of technology and the provincial vocational centres and are known as CAATs) were set up in 1967 in 20 regions. This upsurge in the establishment of additional post-secondary vocational and technological institutions has occurred all across Canada to meet the labour market's increasing need for qualified technicians.

Another significant change in education is the greater accessibility of programs to students regardless of sex. Females, who constituted about 36% of the full-time university and community college enrolment in 1971-72, are increasingly selecting, and being selected for, certain post-secondary courses which previously had shown almost total male enrolments.

Further changes in Canadian education have been brought about by the realization that adjustments had to be made to accommodate variations in interest and abilities of students in different subjects. This has resulted in a drastic revision of policies to include non-graded systems, subject promotion, changes in methods of examination and the extension of guidance facilities.

One of the notable increases in teaching facilities is in the area of library service. A Statistics Canada survey showed that, in the school year 1968-69, school libraries increased their stocks of books by nearly 8 million. These libraries provide up-to-date reference books on all subjects in the school curricula and have assumed increasing importance as resource centres for audio-visual aids such as projectors, films, filmstrips, maps, tapes and records.

Efforts are also being made to overcome the financial barriers to continuing education. Investigations by demographers and sociologists confirmed long-held suspicions that financial constraints were denying advanced education to many Canadians. Consequently, various methods have been tried to lighten the financial burden on the individual and to equalize the rapidly increasing load being carried by the taxpayer. The federal government is assuming an increasingly prominent role in education, particularly in the retraining program of the Department of Manpower and Immigration which involves adult technical and vocational training, as well as in post-secondary education and university education, all matters of prime concern to the nation as a whole.

7.1 Administration and organization of education

7.1.1 Responsibility for education

7.1.1.1 Federal responsibility

In Canada the organization and administration of public education is exercised by the provincial and territorial governments. The federal government is directly concerned only with

schools for Indian children which are administered by the Education Branch of the federal Department of Indian Affairs and Northern Development, with schools for children of servicemen operated in Europe by the Department of National Defence, and with schools for inmates of federal penitentiaries. In addition, the federal government finances retraining of adults, provides financial support to the provinces amounting to at least 50% of operating costs of post-secondary education, participates to a considerable extent in informal education, and makes grants-in-aid for research personnel and equipment in universities. More detailed information on federal responsibility for education is given in Sections 7.1.2 and 7.1.5.

7.1.1.2 Provincial responsibility

Each of the 10 provinces and the two territories has the authority and responsibility for its own education system. As a consequence, organization, policies and practices differ from one to the other. Each has a department of education or of education and youth, headed by a Minister who is a member of the Cabinet in the case of the provinces or responsible to the Council in the case of the territories; Ontario has, in addition, a Ministry of Colleges and Universities, Manitoba a Department of Colleges and Universities Affairs and Alberta a Department of Advanced Education. Each provincial department is administered by a Deputy Minister who is a professional educationist and a public servant. He advises the Minister, supervises the department and gives a measure of permanency to its education policy and, in general, carries out that policy and is responsible for the enforcement of the Public School Act. The department of education usually also includes a chief inspector of schools and a staff of local inspectors, as well as directors or supervisors of curricula, technical education, teacher training, home economics, guidance, physical education, audio-visual education, correspondence instruction, adult education, other specialized sections according to the needs of the particular province, and technical personnel and clerks.

Other provincial departments having some responsibility for operating school programs include departments of labour which operate apprenticeship programs, agriculture departments which operate agriculture schools, departments of attorney general or of welfare which operate reform schools, and departments of lands and forests which operate forest ranger schools.

Each department of education has undertaken, among other things, to provide: inspection services to ensure maintenance of standards; teacher certification; courses of study and lists of prescribed or approved textbooks; financial assistance to local authorities in the construction and operation of schools; and guidance regulations for trustees and teachers. In return, each department requires regular reports from the schools. When first introduced, government grants to schools were based on such factors as number of teachers, enrolment, days in session and attendance. Somewhat later, special grants were introduced in most provinces to meet a variety of expenditures, such as construction of a first school, organization of special classes, transportation of pupils, school lunches and other contingencies. A number of provinces made provision for equalization grants and now most of them have a foundation program of one kind or another.

The work of the departments of education has grown considerably. Many have expanded their services in the fields of health, audio-visual aids, art, music, agriculture, sociology, special education, correspondence courses and pre-vocational and trade courses. At the same time there has been an increasing delegation of authority to local boards and school staffs. One illustration of this tendency is a reduction in the number of departmental (external) year-end examinations. Few provinces now provide for more than one or two such examinations — at the end of the final and, in some cases, at the end of the second-to-last year of the secondary school course. Another example is the increasing use of lists of approved textbooks from which local authorities may make their own choice, instead of lists of prescribed texts. Courses of study are now seldom planned by only one or two experts in the department; instead, they result from conferences and workshops including active teachers and other interested individuals or bodies. In most provinces “curriculum development” is considered to be a continuous procedure.

7.1.1.3 Elementary and secondary schools

In all provinces schools are established and operated by local education authorities functioning under the terms of a Public School Act and held responsible to the provincial government and resident ratepayers for the actual operation of the local schools. Through the delega-

tion of authority, education has become a provincial-local partnership with the degree of decentralization reviewed intermittently.

Elementary and secondary schools may be classified as publicly controlled or private. The publicly controlled schools, sometimes referred to as "public" schools (including separate schools), encompass those that operate under the provincial school system with locally appointed or elected school boards. Private schools generally either provide a similar curriculum to that of publicly controlled schools or concentrate on business, commercial, trade, technical and correspondence courses, or provide a combination of such courses.

Under recent amendments to provincial legislation, school units have been consolidated and consequently enlarged in all provinces. With the growth of cities and towns and of educational facilities and requirements, the old three-member local school board became inadequate as an administrative structure. The original school boards remained as units but provision was made for urban school boards consisting of more members, responsible for both elementary and secondary schools and for providing the necessary staff, buildings, equipment and transportation. The local boards still in existence in some districts have limited powers and duties, usually functioning in an advisory capacity and looking after buildings and grounds.

7.1.1.4 Community colleges

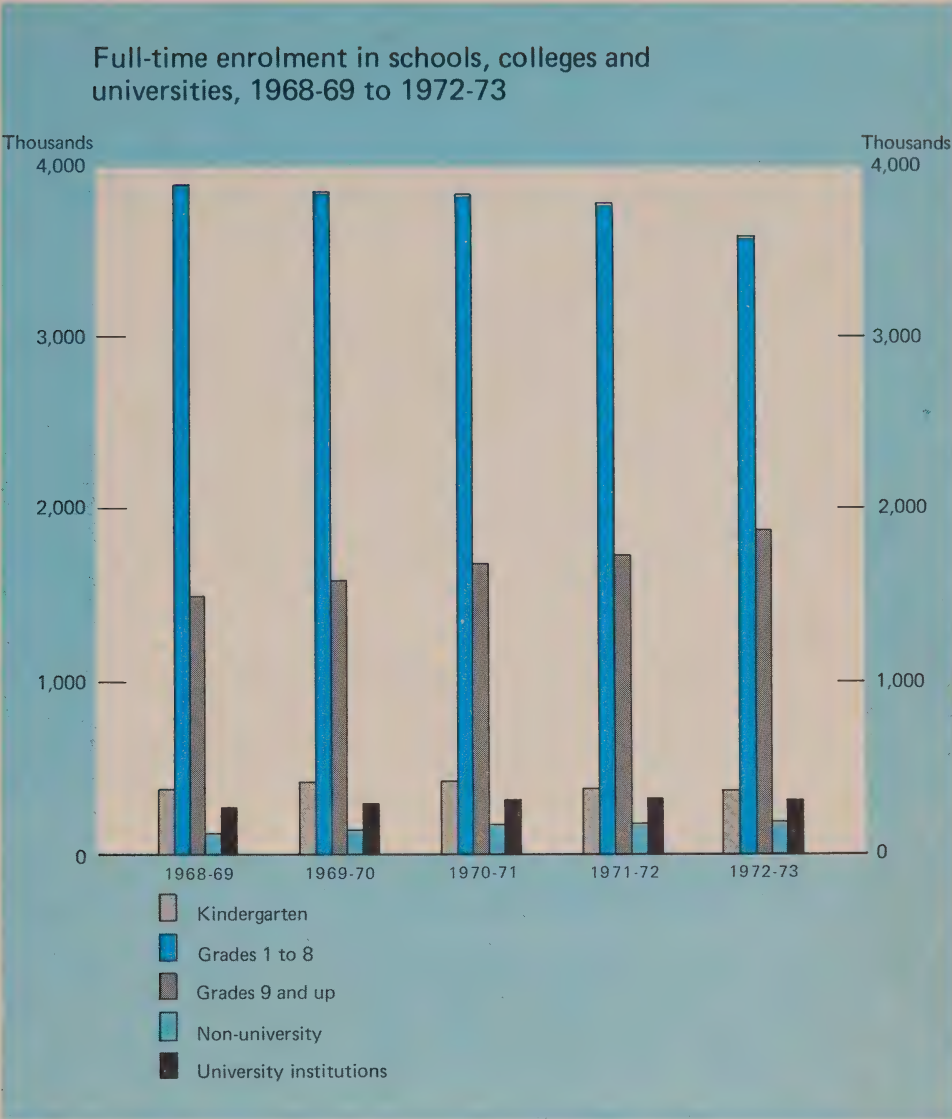
Although there are some privately operated colleges, the provinces are partially or totally responsible for co-ordinating, regulating and financing community colleges and related institutions. Some provincial governments completely finance these colleges while others do so in part. Similarly, the degree of local autonomy given the colleges varies by province.

Since 1960 Alberta, British Columbia, Ontario and Quebec have established new community college structures. In Alberta, the provincial agency is the Alberta College Commission composed of nine members, all appointed by the government. In British Columbia, an advisory board — the Academic Board — serves both universities and colleges and consists of nine members, six appointed by the universities and three by the provincial government. In Ontario, the administration of community colleges is carried out by the Ministry of Colleges and Universities. In Quebec, the Department of Education is responsible for many agency functions. The composition of governing boards varies by province; for example, in Quebec, it consists of 19 members including representatives from the university, the principal and academic dean, students and parents of students.

7.1.1.5 Universities

There are distinctive differences in Canadian systems of higher education. The universities and colleges long ago established by the French were based on the culture of Old France and were administered by Roman Catholic groups, either religious or secular. These French-language institutions still retain their traditional characteristics but now conform almost entirely to the North American system of administration. The largest group of universities and colleges in Canada is administered by English-speaking staff and offers instruction in English. Apart from those founded and still administered by various Protestant religious groups, these institutions are mainly non-denominational, having been established through private subscription or by the provincial government concerned.

Civil legislation regarding the establishment of new institutions or changes in existing ones is usually enacted by provincial legislatures, except for federal military colleges and a few institutions originally established by Act of the Canadian Parliament. Once an institution is legally chartered, control is vested in its governing body, the membership of which is indicated in the charter. The line of authority runs from the board of governors through the president (or rector) to the senate and deans and the faculty as a whole. The composition of the board of governors varies according to the type of institution. Provincial universities normally have government representation; church-related institutions have clergymen. Nearly all boards have either direct representation from the business community, alumni associations and other organizations, or are advised by these groups through advisory boards or committees. A recent phenomenon has been the inclusion of students on administrative bodies. The size of the board varies from a very few to over 60. It has ultimate control of the university and normally reserves to itself complete financial powers, including the appointment of the president and most other staff. On occasion there is faculty representation on the board and recently there have been attempts on the part of faculty groups of many institutions to obtain greater representation on the boards of governors. Responsibility for academic affairs is usually delegated to



the senate. Composed mainly of faculty members, although there may also be alumni and representatives of non-academic groups included, the board is responsible for admission, courses, discipline and the awarding of degrees.

7.1.2 Levels of education

7.1.2.1 Pre-grade 1, elementary and secondary education

Pre-grade 1 enrolment in schools is neither compulsory nor universal throughout Canada, although kindergartens for five-year-olds are part of the elementary school system in large urban centres in most provinces. Recently, an increasing number of kindergartens are accepting four-year-olds. There are also some kindergartens which are run by private individuals and which accept children of three to five years of age.

Each September, most Canadian six-year-olds enter an eight-grade publicly controlled (including separate) elementary school. At about 14 years of age, a significant proportion of those who entered grade 1 move on to a four- or five-year secondary school. Less than 3% of

the elementary and secondary students in Canada attend private schools.

The 8-4 plan leading from grade 1 to university was for many years the basic plan for organizing the curriculum and schools other than those under the jurisdiction of the Catholic school boards of Quebec. This plan, although still followed in some school jurisdictions, has been modified from time to time in all provinces, cities or groups of schools. There are a number of variants to be found in Canada at present: the addition of one or even two years of secondary schooling; the introduction of junior high schools, changing the organization to a 6-3-3 or 6-3-4 plan; or, the combining of the first six years of elementary school into two units, each designed to reach specified goals during the three-year period. In the recently established community colleges, the last one or two years of high school and the first one or two years of college are offered.

At the secondary level, three programs can generally be distinguished — the university entrance course, the general course for those wishing to complete an academic type of program before entering employment, and vocational courses for those wishing to enter skilled trades or pursue further training in the technological fields. However, in recent years changes in the curricula have allowed the student greater flexibility in program selection.

Secondary schools were at one time predominantly academic and prepared their pupils for entry into university. Until recently, vocational schools were to be found only in the large cities, although schools in some of the smaller centres did provide a few commercial and technical subjects as options in the academic curriculum. Today, in addition to the vocational schools and the regular secondary schools providing commercial courses, there are increasing numbers of composite and regional high schools offering regular academic subjects and vocational training in such courses as home economics, agriculture, shop-work and commercial subjects. Occupational or pre-employment classes, set up as part of the total program in regular vocational schools, require from one to three years or even four years for completion, and are terminal in nature. In addition to this type of course, some schools offer special, ungraded one- or two-year vocational programs to students who have completed the final years of high school. Some secondary schools also provide occupational programs for students who have shown no particular aptitude for an academic education or for training in a particular trade. These students learn no specific trade until perhaps their third year of studies. By remaining in school longer, however, they adjust more easily to conditions in the work world.

7.1.2.2 Special education

There is increasing interest in the education of exceptional children. For gifted children, innovative, enriched and accelerated programs are being developed at both the elementary and secondary levels. New types of special classes are sometimes started by parents of children with a common disability, who band together to provide help and show the need for such service, which may then be taken over by public bodies. Progress in providing such education varies from province to province and is most commonly found in city school systems. There are six schools for the blind, 16 schools for the deaf, and a number of training schools for mental defectives. Special classes are conducted in tuberculosis sanatoria, mental hospitals and reformatories.

7.1.2.3 Trade and technical education

Increasing use of automated processes in business and industry is resulting in a shrinking market for unskilled and semi-skilled workers. Early school dropouts are finding it more difficult to get suitable employment and many are trying to acquire in their adult years the general education or training in the skilled trades that they missed in their youth. Persons still in the regular school system are tending to remain longer and go farther in the system, partly because of the changing attitudes of society toward education and partly for economic reasons.

To meet this growing demand for better educational facilities, educators are striving to provide comprehensive programs at all levels to satisfy the needs not only of the university-bound but also of the great majority who require adequate preparation for early entry into the labour force. It is now accepted that vocational education for adults as well as for youths is a public responsibility that must be made available, as needed, throughout the person's working life. Education of this nature is of national concern and has a direct impact on material prosperity, the economy and the standard of living.

The pattern of vocational education in Canada varies from province to province and there are variations within the provinces. However, there are three basic types of institutes offering

vocational education: secondary schools, trade and occupational training schools and post-secondary institutes of technology. Many municipal school boards provide vocational courses as part of the regular secondary school program in technical or composite-type schools. Students in these schools get some general vocational training or training in certain specific fields, such as typing or auto mechanics, along with instruction in general academic or cultural subjects.

Trade and occupational training schools, on the other hand, are open only to those who have passed the provincial school-leaving age and have left the regular school system. These schools offer specialized training and their purpose is to develop competent people for a variety of occupations. Courses at the trade level do not usually require high school graduation; the grade level demanded varies according to province or trade from grade 8 to grade 12.

The third type, the institutes of technology, operate at a higher level of training. Enrolment in these institutions requires high school graduation or at least high school standing in such relevant subjects as mathematics and the sciences. Graduates from institutes of technology are awarded diplomas of applied arts or diplomas of technology and form an essential link between professionals on the one hand and qualified craftsmen on the other. Most of the institutes of technology and trade schools across Canada are provincially operated.

In addition to the vocational education and training provided by these three types of publicly operated schools, many private business colleges and trade schools offer a wide variety of business, trade and technical courses, some through correspondence. Vocational education is also carried out under a system of apprenticeship training. Such training is given mainly on the job, with classes taken at the trade schools either during the evening or on a full-time basis during the day for periods ranging from three to 10 weeks a year.

7.1.2.4 Tertiary education

Community colleges and related institutions provide post-secondary education in various programs that enable students to proceed to university with credit of up to three years of university study, or undertake technical/vocational training in programs of up to four years in duration, leading to the occupational level of the skilled technologist.

Entry requirements involve secondary school graduation but in some institutions a "mature student" status is used to enable promising but otherwise ineligible students to enter. Qualifying programs are also offered to help students overcome academic deficiencies.

Programs offered in the technical/vocational sphere are widely diversified and reflect the manpower requirements of the college region. Other programs offered are: business administration, applied arts, health sciences and a wide variety of technologies such as architectural, mechanical, electrical, chemical and resource. Many of these colleges offer credit and non-credit programs in continuing education.

There were approximately 150 institutions offering college-level programs in Canada in 1971-72. The Atlantic Provinces had 12 colleges: the College of Fisheries and the College of Trades and Technology in Newfoundland; Holland College in Prince Edward Island; two marine institutes, two technical institutes, a land survey institute and an agricultural college in Nova Scotia; and two technical institutes and a forest ranger school in New Brunswick. Quebec had a total of 68 colleges including 35 CEGEPs (*collèges d'enseignement général et professionnel*), 29 private colleges and several other colleges operated by departments other than education. In Ontario there were 26 CAATs (colleges of applied arts and technology), four agricultural colleges, three regional medical laboratory institutes, one college of art, one chiropractic college and one school of horticulture.

The western provinces had 34 colleges as follows: Manitoba, three community colleges; Saskatchewan, two public colleges and two private colleges; Alberta, six community colleges, three agricultural and vocational colleges, two technical institutes and two private colleges; and British Columbia, nine community colleges, two schools of art, two private colleges and one technical institute.

7.1.2.5 Nursing education

Traditionally, nurses' (RN) diploma courses have been conducted in hospital schools. In 1964 Ryerson Institute of Technology became the first non-hospital institution in Canada to provide nurses' diploma training. Since then, there has been a definite trend toward giving the theoretical part of the instruction in community colleges and providing only the practical instruction in hospitals. Several provinces — Quebec, Saskatchewan, Alberta and British Columbia — offer nurses' training in non-hospital schools. Ontario has a network of regional schools

of nursing which are neither part of the general education system nor under the administration of hospitals.

Another trend in nursing education is a shortening of the course from three years to two, except in Quebec where the three-year training period will remain (according to present plans) with the first two years spent in CEGEPs and the third in hospital to gain "polytechnical" training.

In addition to nursing education solely at the post-secondary non-university level, students receiving their nurses' (RN) diploma in hospital schools may qualify for a degree on completion of the necessary additional one- or two-year course or longer (depending on the institution) offered by some universities. Further, undergraduate and graduate degrees are offered to students who enter university directly from secondary school.

7.1.2.6 Teacher training

All provinces require candidates for elementary school teaching certificates to have high school completion or better, with at least one year of professional training in a faculty of education or a teachers' college. The training usually consists of professional and academic courses and some time spent in practice teaching. High school teachers are generally university graduates who have taken an additional year of professional training in a college of education, or who have graduated with a degree in education. The trend is for departments of education to delegate to universities the responsibility for training elementary school teachers as well as secondary school teachers.

In all provinces except Nova Scotia, Quebec and Ontario, all teacher training is conducted at the university level where three or four different courses leading to a degree are provided; about three quarters of the time is devoted to academic courses in arts and science and the remainder to professional courses. Teachers' colleges still exist in these three provinces but are generally disappearing as independent institutions. In Nova Scotia, there is no plan to integrate its one teachers' college with the university, but an optional third year will be included in the program which currently requires two years after senior matriculation. Five universities also offer degree programs in education. The pattern in Quebec is for students to first complete the two-year academic program in a CEGEP and then continue their teacher training at university. Sixteen *écoles normales* have been absorbed by other institutions since 1969-70 and only five are still in operation. In Ontario only eight teachers' colleges remain, and by 1973-74 only persons holding a university degree were accepted for teacher training.

7.1.2.7 University and college education

A university may be defined as an institution of post-secondary education, professional training and research which grants first and advanced degrees; a college is an institution with usually only one faculty granting a first degree but is more likely to be affiliated with a degree-granting university. To qualify for entrance into university, students must have high school graduation (11 to 13 years of schooling depending on the province) or equivalent standing. In Quebec the new "collegial" program requires two years of CEGEP training before entering university. An applicant who lacks the usual academic qualifications may gain admittance to university after reaching a certain age by passing entrance examinations and being assessed as a "mature" student.

Courses of instruction ranging in duration from three to five years (in Quebec a minimum of five years from high school graduation) lead to a bachelor degree in arts, pure science and such professional fields as agriculture, engineering, business administration, pharmacy, nursing and education. Courses in law, theology, dentistry, medicine and some other fields are longer — usually requiring completion of part or all of a first-degree course in arts or science for admission. For those pursuing graduate studies and research, the second degree is normally the master's or licence (at least one year beyond the first degree) and the third is the doctorate (normally requiring at least two additional years beyond the second degree).

7.1.2.8 Continuing education

A relatively new phenomenon in Canadian education is the growth of continuing education, sometimes referred to as adult education. The provision of evening and summer extension and correspondence courses in a variety of subjects is now an important part of the education system. Diversified programs of study for adults through correspondence and extension courses are offered by school boards, provincial government schools, private trade

schools and business colleges, business and professional associations, community colleges and related institutions, and universities. As a result of this activity in adult education, men and women who find it impractical or impossible to attend full-time or regular classes because of business and family responsibilities, illness or inaccessibility to schools are able to pursue accreditation at diverse educational levels or to advance their personal interests. Correspondence course study provides instruction to children and adults confined to home or hospital and to inmates of Canadian correctional institutions.

School boards, universities and community or regional colleges offer courses leading to formal accreditation as well as courses reflecting individual and community interests. Recent surveys of school boards and universities indicate that some 560,000 adults are enrolled in formal high school and university level courses on a part-time basis. In addition, more than 500,000 adults participate in a host of non-credit courses and related activities.

Another avenue that provides adults an opportunity to continue their education is home study. A recent survey of the provincial departments of education shows that more than 71,000 adults were enrolled in correspondence study courses. Several universities also offer degree or diploma credit courses through correspondence study.

7.1.3 Provincial and territorial education systems

The following paragraphs outline the administration and organization of education in all provinces and territories, emphasizing the important changes that have occurred in recent years.

Newfoundland. Until recently, the system of education in Newfoundland, originally established in 1874, was strictly denominational. As a result of the recommendations of a provincial Royal Commission on Education and Youth set up in 1964, consolidation of the school systems of the major Protestant denominations has taken place but the Roman Catholic, Pentecostal and Seventh Day Adventist denominations still operate their own schools. Further reorganization occurred in 1969 when schools operated by 300 denominational boards in the province were regrouped into 35 districts. The Pentecostal Assemblies and the Seventh Day Adventists each operate one "school district" which, in theory if not in practice, embraces the whole province. The largest single denomination in the province, the Roman Catholic, continues to operate its own system but the number of its boards was recently reduced from over 100 to 15.

Pre-grade 1 enrolment in Newfoundland is not compulsory but, with the construction of larger and more centralized elementary schools, increasing numbers of five-year-olds have been admitted for instruction in kindergarten classes and, by the fall of 1971, the kindergarten enrolment as a proportion of the five-year-old population had reached 95%. The number of children in nursery schools and kindergartens run by private individuals remains quite small.

There are two major patterns of school organization in the province: elementary schools (kindergarten and grades 1-6) with central high schools (grades 7-11), and elementary schools (kindergarten and grades 1-8) with regional high schools (grades 9-11). There are only a few junior high schools (grades 7-9) in the province which is also served by a network of 11 district vocational schools. No vocational instruction, except for commercial courses, is given in the secondary schools.

Tertiary education includes both university and post-secondary non-university programs. Memorial University in Newfoundland offers degree courses in arts and sciences, commerce and business administration, education, engineering and applied sciences, and certificate courses in public administration and banking. Post-secondary non-university education is offered at the College of Trades and Technology and the College of Fisheries, Navigation, Marine Engineering and Electronics. Nurses' (RN) diploma courses are conducted exclusively in hospital schools.

Prince Edward Island. During the past decade, Prince Edward Island has moved from small education units toward consolidation. In July 1972, a major reorganization of the provincial school administration changed the system formerly organized along county lines to one of five administrative units.

Kindergarten classes are not part of the publicly controlled school system; however, nurseries and kindergartens operated by private individuals provide some pre-grade 1 classes although the enrolment is still quite small in relation to the four- and five-year-old population.

The major pattern of school organization in Prince Edward Island until junior matriculation is: elementary school (grades 1-6), junior high school (grades 7-9) and senior high school (grades 10-12); an additional pattern consists of elementary school (grades 1-8) and high school (grades 9-12). As in other provinces, Prince Edward Island is working toward a system that will eliminate grade promotion in favour of subject promotion, using a credit system. Five percent of the elementary and secondary pupils currently receive their education in French, and French is taught as a second language in all other schools.

The province is served by a network of 15 regional high schools offering academic programs from grades 9-12 and a one- or two-year business education course. Two vocational high schools provide a variety of four-year trade courses — a one-year orientation program followed by three years of training in a specific trade concomitant with academic instruction in language, mathematics and science.

The Prince Edward Island School of Nursing is now the only establishment offering a nursing diploma leading to professional registration (RN). Two new institutions were opened in Charlottetown in 1969 — the University of Prince Edward Island which replaced the former Prince of Wales College and St. Dunstan's University, and Holland College which offers post-secondary vocational training.

Nova Scotia. As in other provinces, Nova Scotia has had changes in the organizational structure of elementary and secondary education. The Educational Assistance Act and certain amendments to the Education Act, both passed by the provincial legislature in 1968, allowed for the creation of amalgamated school boards. Three amalgamated boards began operation in 1970-71, and their operation is being evaluated. In addition, there are other boards designated as rural, urban and regional.

Nova Scotia has almost 100% of its five-year-old population in "primary" year in the publicly controlled schools; perhaps as a consequence, enrolment in private nurseries has increased only slightly in recent years.

The predominant grade organization in this province is: elementary school (primary and grades 1-6), junior high school (grades 7-9) and senior high school (grades 10-12). There are a few variations in this basic school pattern, such as primary to grade 6 and grades 7-12, or primary to grade 9 and grades 10-12. In 1969, a modified junior high school program was authorized which gives students of average or above-average standing extra instruction in one or more subjects. High school graduation is at either the grade 11 (junior matriculation) or the grade 12 (senior matriculation) level, although enrolment in the latter is not universal in this province. As a result of revisions in the school system since 1966, 13 regional vocational schools replaced the county vocational schools. Students now attend regional vocational schools for occupational training since the secondary schools provide only business and commercial programs.

In 1969, authority was given for the award of high school equivalency diplomas to adults who had not completed high school but had improved their educational standing through job experience or informal training. This diploma is awarded on the basis of a series of tests, developed and validated over a 25-year period by the Commission on Accreditation of the American Council on Education; Nova Scotia is the first Canadian province permitted to use these tests.

Nova Scotia has two institutes of technology offering trade-level and post-secondary vocational courses, an agricultural college providing post-secondary terminal and university transfer programs, and a land survey institute. A bilingual community college which was scheduled to open in 1970 to serve the Acadian population has not yet become operational. All nursing training leading to the RN diploma is carried out in hospital schools. There are several universities and colleges offering degree programs in many disciplines. Teacher training is given in one teachers' college and degree programs in education are offered in five universities — Acadia, Dalhousie, Mount Saint Vincent, St. Francis Xavier and Saint Mary's.

New Brunswick. There are 33 school districts in the province combined into seven regions, each administered by a regional superintendent. Instruction is available in both English and French; 34% of the student population at the elementary and secondary level take their instruction in the French language.

Pre-grade 1 classes are not offered in the publicly controlled school system, except in unusual or experimental circumstances. Enrolment in private nurseries and kindergartens is

also low in proportion to the number of five-year-olds in the province.

The province has a 12-year system of public education leading to junior matriculation. The most common patterns of school organization are: elementary school (grades 1-6), junior high school (grades 7-9) and senior high school (grades 10-12); and elementary school (grades 1-6) and high school (grades 7-12). Vocational courses are taught within the framework of the secondary school system and are taken concomitantly with academic instruction.

The New Brunswick Institute of Technology in Moncton and the Saint John Institute of Technology offer post-secondary vocational and technical programs. Teachers' colleges still exist in New Brunswick although there is indication that they will soon be integrated with the university system. In addition to six hospital schools, the Saint John School of Nursing offers training leading to the RN. This province has four universities offering a variety of degree programs.

Quebec. In 1964, the Quebec government, acting on recommendations of the provincial Royal Commission on Education (1961-64), passed legislation (under Bill 60) establishing a new administrative structure for the school system in that province; the Department of Education replaced the former Departments of Youth and of Public Instruction. Today, in addition to the Minister and Deputy Minister, the structure of the Ministry includes two Associate Deputy Ministers — one for the Catholic sector and one for the non-Catholic sector. This change of system required large increases in education expenditures to finance the building of new schools and to acquire additional teaching personnel and materials. In September 1971, there were 64 regional school boards (55 Catholic and nine Protestant) with 993 affiliated local school boards.

Kindergartens admitting five-year-olds are now part of the school system and in 1972-73 over 90% of the five-year-old population was registered. Elementary education, intended for pupils aged six to 11, is given in publicly controlled schools operated under the direction of local school boards. Since the autumn of 1968, pupils are enrolled in the first grade only if they have reached the age of six by October 1. The new system calls for six years of elementary school, five years of secondary school and a collegial level to be taken in post-secondary non-university institutions. Another emerging trend is a composite course with graduated options and promotion by subject matter.

The federal Department of Indian Affairs and Northern Development assumes full responsibility for the education of Eskimo children living in northern Quebec, and uses the curriculum established by the Department of Education of Quebec.

Collèges d'enseignement général et professionnel (CEGEPs), inaugurated at the beginning of the 1967-68 school year, replaced many of the former classical colleges, normal schools, schools of nursing and technical institutes. These colleges, currently numbering about 40, admit students graduating from grade 11 and offer three-year terminal technical programs and two-year academic programs which are prerequisite for university entrance. Private or classical colleges offer the equivalent of the two-year university transfer program offered in the CEGEP, at the end of which successful students receive a *diplôme d'études collégiales*. Students may, however, continue at these establishments and work toward a degree granted by the university to which the college is affiliated.

There are at present four English-language CEGEPs in operation. McGill University, Sir George Williams University and Loyola College (now affiliated with Sir George Williams) also offer the equivalent two-year CEGEP program preceding the three-year university program, an interim arrangement pending the establishment of additional English-language CEGEPs. Nursing diploma (RN) programs are now carried out exclusively in the CEGEPs. Teachers' colleges still exist in Quebec but the trend is for teacher training to be given in the universities after completion of the academic program in the CEGEPs. There are several universities and colleges located in Quebec that offer a wide variety of degree, diploma and certificate programs.

Ontario. Under recent amendments to the Ontario School Act, county districts have replaced former individual units that were administered by three-member boards of trustees. The larger cities, such as Toronto and Ottawa, are excluded and operate their own school systems. Roman Catholic schools are given a choice. In most of Ontario the separate administration of elementary and secondary schools has been abolished and these schools are now administered by the same board. With each county administered by one board, there has been a drastic reduction from thousands of districts to less than 200. An important amendment to the Act in

1969 provides for schools for trainable retarded children to be established under the jurisdiction of a special divisional board of education.

Ontario has a 13-grade system (senior matriculation) with provision for kindergarten and pre-school enrolment. The predominant pattern of school organization consists of elementary school (kindergarten and grades 1-8) and secondary school (grades 9-13). A variation in this organization is the 6-3-4 pattern: elementary school (kindergarten and grades 1-6), junior high school (grades 7-9) and senior high school (grades 10-13).

One of the latest developments is the employment of a "credit system" to cover the former grades 9-12 leading to the secondary school graduation diploma. This will provide more flexible schedule patterns with a view to greater freedom of student choice within an expanding range of subject offerings, even to the creation of "individual timetables" for students. A credit is defined as a course successfully completed, normally after 110 to 120 hours of scheduled time. The diploma (grade 12 standing) is awarded after the successful completion of a minimum of 27 credits.

High schools in this province offer double-option trade courses in the science, technology and trades programs, and double-option business courses in the business and commerce programs. There is also a two- or three-year occupational program to which some students may voluntarily return for a fourth year. There are also special one-year commercial and technical programs that follow grade 11 or 12.

In Ontario at the beginning of the 1967-68 school year, the former institutes of technology and the provincial vocational centres were incorporated into colleges of applied arts and technology known as CAATs. These colleges were set up in 20 regions to serve the needs of the communities at both the post-secondary and the occupational levels. While the CAATs were not designed to accommodate prospective university transfer students, the universities do accept first-class graduates from the two- or three-year post-secondary programs into the first- and second-year degree courses, respectively. On October 1, 1971 these institutions became the responsibility of the newly formed Department of Colleges and Universities. In addition to the regional schools of nursing and the hospital schools of nursing, Humber College and Ryerson Polytechnical Institute offer nurses' (RN) diploma programs. Eight independent teachers' colleges existed in Ontario in 1972-73 but it is assumed that a number of these will soon be integrated with the university system. There are over 20 universities and colleges in this province offering a diversified program of courses leading to degrees, diplomas and certificates.

Manitoba. In 1971-72 over 90% of public school enrolments in Manitoba came under the administration of 48 unitary division boards responsible for all public elementary and secondary education within their jurisdictions. In addition, there are some schools in the remote areas of the province and other special schools that are not included in these 48 unitary division boards.

Public kindergarten classes are available in most elementary schools in Manitoba. Enrolments have almost tripled in the past 10 years as these facilities have been expanded and the number of children in private nurseries and kindergartens has consequently declined.

There are two major patterns of school organization in the 12-grade system to senior matriculation: elementary (kindergarten and grades 1-8) and high school (grades 9-12); or elementary (kindergarten and grades 1-6), junior high school (grades 7-9) and senior high school (grades 10-12). Increased emphasis is being placed on open-area classrooms, higher qualifications for teachers, and improved curricula. Other innovations in the elementary and secondary schools include: more meaningful curricula for Indian and Métis children now incorporated into regular classes; emphasis in health programs in relation to alcohol and narcotics; audio-lingual programs in French and German at grade 10 level; and emphasis on continuous testing to replace formal examinations and on the concept of "independent study" for students in some secondary schools. Final examinations are set and marked under the auspices of the High School Examination Board of Manitoba. Entrance to university requires evidence of Board standing in at least three subjects with school standing acceptable in two other subjects.

In Manitoba, vocational students may take either a pre-employment commercial or industrial program, the successful completion of which entitles them to an "academic transcript". Alternatively, students may complete the university entrance program and continue for an additional year in a special commercial program, or those following the industrial program may spend half their time in the university entrance program. There is also an occupational entrance program commencing at grade 7 and continuing until grade 10 or 11, dur-

ing which period students receive part of their training on the job in business or industry.

The Manitoba Institute of Technology and Applied Arts and the two vocational centres at Brandon and The Pas were designated as community colleges in the fall of 1969 and renamed Red River Community College, Assiniboine Community College and Keewatin Community College, respectively. These institutions offer both post-secondary terminal career programs and vocational courses at the trades level. Although no provision is made for university-transfer programs, graduates from the career programs have, in special circumstances, been granted credits applicable to a university program. Training for nurses qualifying them for the RN diploma is provided at Red River College as well as at five hospital schools.

Teacher training is offered only at the university level in this province. Seven colleges and universities offering degree programs are located in Manitoba. The largest — the University of Manitoba — offers courses in arts and sciences, law, medicine, education, applied sciences, architecture and many others.

Saskatchewan. Many schools in the larger centres of Saskatchewan are now offering kindergarten education, although elsewhere in the province such classes are not normally available. The proportion of five-year-olds attending pre-grade 1 classes within the publicly controlled school system has increased from about 15% in 1960-61 to 27% in 1971-72.

The traditional 12 elementary-secondary grades have been replaced by four divisions, each consisting of three years of school for a student making normal progress. In Divisions I and II, the principle of non-grading, involving the ideas of continuous progress and flexible promotion, has been adopted. Division III programs have been planned to meet the special needs of pupils in the 13- to 15-year-old age group faced with the problems of emerging adolescence. Division IV is undergoing major changes in the total scope of courses offered and in the content and methods used within particular subject areas. Recent amendments to the Saskatchewan School Act allow for the exclusion from the regular system of children mentally deficient and incapable of learning. Educable handicapped children attend special classes in regular schools; blind and deaf children between seven and 16 years of age are educated in special schools.

In Saskatchewan, vocational subjects may be taken in the general, industrial arts, commercial or special terminal programs, none of which qualify the student for university entrance. Vocational courses in the high schools were set up with a view to providing a closer articulation between those schools and the technical institutes. Most of the vocational students in grade 9, apart from those in the commercial course, take five shops not associated with any one specific trade; similarly, students in grade 10 may take two shops. The Saskatchewan Institute of Applied Arts and Sciences and the Saskatchewan Technical Institute offer vocational courses only at both post-secondary and trades levels. The former has taken over the total responsibility for the nurses' (RN) diploma program, and in 1972 only one hospital school remained.

The University of Saskatchewan, at both the Regina and Saskatoon campuses, offers many degree programs.

Alberta. Education in Alberta is under constant review by the province's Commission on Educational Planning, charged with the broad task of predicting what Alberta society will be like educationally, socially and economically during the last decades of the 20th century. Innovations in recent years in the elementary-secondary level include: extensive experimentation in programs carried out at the local school level; the use of French as the language of instruction during 50% of the school day in grades 3-12 in certain schools; construction of modern buildings incorporating the latest design in instructional facilities; movement toward the semester system and other methods of dividing the school year; and implementation of school television projects. The province is organized into divisions for purposes of education and each division is administered by its own school board.

Kindergarten classes are not part of the provincial school system although some school boards, particularly those in the cities, do provide such classes. In addition, about 20% of five-year-old children are enrolled in privately operated nursery schools and kindergartens.

The two predominant patterns of school organization in Alberta are: elementary school (grades 1-6), junior high school (grades 7-9) and senior high school (grades 10-12); or elementary school (grades 1-8) and high school (grades 9-12). Alberta operates its secondary schools on the composite or comprehensive principle. Most of the wide range of vocational

programs conducted are offered in grades 10-12. In grade 12, some of the vocational courses lead to the granting of 15-20 credits, of which 100 are required for an Alberta High School Diploma.

In the fall of 1971, a new Department of Advanced Education was formed, separate from the Department of Education. This Department is responsible for universities, public colleges, institutes of technology and the agricultural and vocational colleges formerly under the jurisdiction of the Department of Agriculture. The five public colleges, previously known as "junior" colleges, the two institutes of technology and the three agricultural and vocational colleges, all offering vocational programs at the post-secondary level, are now part of the community college system.

Programs at the first- or second-year university level are provided at three church-related institutions: Camrose Lutheran College, the bilingual Collège St. Jean and the Canadian Union College which also offers two-year terminal vocational studies in secretarial science. Nurses' (RN) diploma programs are at present given at both hospital schools and four community colleges: Lethbridge, Medicine Hat, Mount Royal and Red Deer.

One large university, the University of Alberta, offers a variety of courses including fine and applied arts, arts and sciences, medicine, dentistry, pharmacy, nursing, household science, engineering and applied sciences, agriculture, library science, law and education. The province also has two other universities — the University of Calgary and the University of Lethbridge — and three small colleges.

British Columbia. Details of education programs in British Columbia are similar to those of the other provinces. Its central organization divides responsibility for curriculum, instruction, adult education, university and college affairs, research and standards, home economics, correspondence courses, school broadcasts, visual education, technical and vocational education, community programs, Jericho Hill School for the deaf and blind, and examinations.

British Columbia's former 13-year system of education, culminating in senior matriculation, is being replaced with a 12-year system but the senior matriculation year is still available in universities, in some of the regional colleges and in some high schools. The predominant pattern of school organization consists of elementary school (grades 1-6), junior high school (grades 7-9) and senior high school (grades 10-12). Five of the six programs offered in grades 11 and 12 are vocationally oriented — commercial, industrial, community services including home economics (not specifically labour-force-oriented), visual and performing arts, and vocational. There are a substantial number of pupils enrolled in special classes, such as those for educable retarded, blind or deaf children. In most school districts, the less severely handicapped receive special instruction in regular schools and the more severely handicapped are taught in special schools under government or private operation.

Ten community colleges and the British Columbia Institute of Technology have been established since 1965. The colleges, operated by consortiums of school boards, enable residents of a particular geographic area to take the junior years of university or a post-secondary terminal vocational course. Vancouver City College is operated by the Vancouver School Board only, and the British Columbia Institute of Technology, which offers post-secondary career programs only, is operated by the provincial Department of Education. Trinity Junior College is a church-related institution which provides the first two years of university. Columbia Junior College, a private non-denominational institution located in Vancouver, offers a terminal career course in fashion design as well as university transfer programs which are recognized by the University of British Columbia.

In addition to the hospital schools of nursing, the British Columbia Institute of Technology, Selkirk College and Vancouver City College offer the nurses' (RN) program and Vancouver City College provides specific training in psychiatric nursing.

The largest degree-granting institution in the province — the University of British Columbia — has faculties of architecture, law, medicine, applied sciences, education, arts and sciences and others. A major development for the 1970s, based on the report of the Commission on the Future of the Faculty of Education, is the revision of the academic program and administrative structure of this university's Faculty of Education. Among the 85 recommendations are such innovations as the adoption of a single five-year Bachelor of Education program, introduction of the "teaching associate" idea, a new Master of Pedagogy degree, and student participation in decision-making at the operational level. There are two smaller univer-

sities, Victoria and Simon Fraser, in British Columbia and a number of small colleges, most of them church-related.

Yukon Territory. The Yukon Territory school system is administered by the Yukon Department of Education and operated through a superintendent and staff at Whitehorse, appointed by the territorial government and responsible to the Commissioner of the Territory. Schools in the Yukon Territory have always been publicly controlled, except for the federal Indian Residential School at Carcross which closed before the 1969-70 school year.

Northwest Territories. The Northwest Territories school system, consisting of the districts of Mackenzie, Franklin and Keewatin, is operated by the Department of Education of the territorial government. The official transfer of responsibility for education from the federal Department of Indian Affairs and Northern Development to the territorial Department of Education occurred in April 1969 in the Mackenzie District and April 1970 in the Franklin and Keewatin Districts; 58 schools came under the control of the territorial Department, in addition to several schools already under its control.

The territorial Department of Education is continuing the work done in the past by the Department of Indian Affairs and Northern Development, and is providing educational opportunities for northern residents equivalent to those enjoyed by citizens in southern Canada. New schools have been constructed at Edzo, Frobisher Bay, Baker Lake, Cape Dorset, Coral Harbour and Clyde River and an education curriculum has been developed relevant to the cultural heritage of Eskimo, Indian and Métis students, who make up the majority of pupils in the schools. The Department, with the assistance of the Department of Indian Affairs and Northern Development, is initiating the collection of stories and legends of the Dogrib people and a Dogrib grammar and a dictionary are being produced.

7.1.4 Education of Indians and Inuit

Indians. The number of Indian students enrolled in pre-vocational courses during 1972-73 increased to 4,503 from 3,962 in 1971-72. During the same period there were similar increases in university enrolments, from 559 to 911, and in teacher training from 63 to 104. Professional training enrolments increased from 562 to 1,368. Indian history, traditions and languages are now included in the curriculum, and native culture is stressed through language, visual aids, tapes and printed matter as well as Indian dances and arts.

In January 1973, 71,319 Indian children were enrolled in pre-school, elementary or secondary school classes in federal or provincial schools. The pre-school program for four- and five-year-olds received special emphasis. There was a 2.1% increase in pre-school enrolment, and a 4% increase in secondary school enrolment. Federal financial assistance for Indian students attending non-federal schools varies from payment of tuition fees and provision of school buses, many of them operated by band councils or Indian contractors, to full maintenance either in boarding homes or student residences, which during the year accommodated 11,000 Indian students unable to attend local schools because of isolation or other reasons.

Federal schools for Indian students are in operation in all provinces except Newfoundland. During 1972-73, 22 major capital projects were under construction or had been completed, providing the federal school system with a total of 112 new classrooms, seven gymnasiums and 42 staff units. The total cost of the federal schools construction program was in excess of \$11 million. A further \$5 million was spent for classroom space in provincial schools attended by Indian students.

Inuit (Eskimos). Great emphasis is given to education and vocational training as the means to help the Inuit adjust to a changing way of life. In 1972-73, 4,600 Inuit pupils were enrolled in school in the Northwest Territories compared with only 451 out of a total of 2,000 pupils in 1955. There are 69 settlements in the Northwest Territories, 32 of which are Eskimo settlements; of the 58 schools, 30 are in Inuit settlements. Kindergarten classes are provided in 35 of these schools, 22 of them in Inuit settlements.

Throughout the Northwest Territories education is a responsibility shared by the federal and territorial governments and administered by the Department of Education of the Northwest Territories. In April 1969 the territorial government assumed responsibility for the administration of education in the Mackenzie District, and a year later took over the same responsibility for the eastern Arctic district. The responsibility for education of the Eskimos in Arctic Quebec remains with the Department of Indian Affairs and Northern Development.

In 1973 Eskimo was available for the first time as a language of instruction in a few communities, and was offered as a subject in several others.

The Continuing and Special Education Division of the Department provides for all educational and training activities not contained within the formal elementary and secondary school systems. Adult education programs are designed to help adults in the territories develop their abilities to the fullest extent and to make living more meaningful and comfortable in a rapidly changing technological age.

Vocational education programs, including apprenticeship, are designed to train people for either wage employment or self-employment in specific occupations. Apprenticeship continues to be the most effective program for the development of trades people; manual skills are learned on the job where close watch is kept to assure that the apprentice is receiving work experiences in all available trades practice. In addition, each indentured apprentice receives six to eight weeks of full-time trade theory training in an in-school situation during each year of his apprenticeship.

It will, however, be some time before an extensive university program is offered in the North. The University of Saskatchewan now offers courses in its research centre at Rankin Inlet, and the University of Alberta has expanded its program in the Mackenzie area, offering courses at Fort Smith, Yellowknife and Inuvik.

7.1.5 Financing education

Of the total expenditures on education across Canada amounting to \$8,241 million in 1971, local governments contributed 21.3%, provincial governments 59.6%, the federal government 11.9% and the remaining 7.2% originated from fees and other sources.

Local and provincial education. The magnitude of the elementary-secondary sector of education is most clearly evident when expressed in dollars. In 1970 and 1971, total expenditures at this level were \$4,900 million and \$5,472 million, respectively, these amounts representing about 66% of all expenditures for all education in Canada. The 1971 expenditure represented a 96% increase over the \$2,791 million spent in 1966.

The actual operation of public elementary and secondary schools is in the hands of the local elected or appointed school boards which determine the budgets and therefore the amount of taxes required for school purposes. In most cases, these taxes are levied and collected for the boards by the municipalities; however, in those areas where there is no municipal organization the school boards have the power to levy and collect taxes for school purposes. In the calendar year 1971 local governments provided 40% of the cost of operating school boards, and provincial governments 57%. The remainder was obtained from fees (less than 0.5%) and various other sources (about 3%). Four provinces — British Columbia, Alberta, Manitoba and Nova Scotia — pay operating grants on an equalization formula and thus ensure at least a minimum level of education throughout the province. The standard is determined either in terms of so much per pupil, or from an established salary scale for teachers with a prescribed teacher-pupil ratio, or by some combination of these.

In Newfoundland where municipal organization scarcely exists outside certain larger centres, there are three school-tax areas. In Prince Edward Island where there is no municipal organization except in the cities of Charlottetown and Summerside, the school boards levy and collect property and poll taxes but the province provides about two thirds of the operating costs. Ontario and Saskatchewan make use of various equalization and incentive grants. On January 1, 1967, the New Brunswick government introduced a Program of Equal Opportunity under which it assumed full responsibility for public education and other social services. Consequently, in the following years the revenue used for public education was derived almost entirely from provincial taxes (real property and sales taxes); the rest came from miscellaneous sources. Most provinces provide grants for school buildings and equipment, establish loan funds, and guarantee debentures for school purposes and assist in selling them.

The creation of a financial reporting system which ensures comparability between the provinces and timeliness of output has been difficult. However, reasonably accurate comparable cost-per-pupil data for each of the provinces at the elementary-secondary level are now available. Differences in accounting procedures create difficulties but, for the most part, they can be coped with. It must be remembered that the number of students being dealt with in all cases is extremely large, and the expenditure items on which consistency is difficult to achieve across all provinces are always relatively minor in relation to the provincial total.

In the past, reliance was placed entirely on audited statements and published public accounts for all data; this resulted in delays that sometimes exceeded 30 months between the termination of an academic year and the publication of national information on schooling costs in Canada. However, provincial departments of education are now providing budgets and other information which will make it possible to have financial estimates available sooner.

The determination of more accurate educational costs on a current basis has enabled the federal government to provide significant sums of money (\$70.1 million in 1972-73) to the provinces to further the aims of bilingualism. A fixed percentage of the cost-per-pupil of elementary-secondary education is paid to each province, based on their costs, for the amount of minority language education provided and the time devoted to teaching the second language.

The importance of adequate statistics in order to plan and maintain a program of education support cannot be over-emphasized. An excellent data base already exists and it is constantly being refined and improved. The use of education statistics in order to establish and maintain programs designed to meet national and regional aims is now a genuine possibility, and could be put to immediate use.

Financial data (along with enrolment and teaching staff statistics) form an integral part of a developing nation-wide information system which was initiated by the Council of Ministers of Education in Canada but has been carried on by the Education Division of Statistics Canada since 1969. In addition, other initiatives have been taken to round out the statistical picture. In 1971, a survey was undertaken on school transport to provide national and provincial data on a number of aspects of this particular education phenomenon, on which very little information has ever been available; results of the survey were published in mid-1974. Recent moves in nearly all provinces to consolidate both administrative and education services into large units have resulted in significant increases in pupil transportation services which, it appears, now absorb from 3% to 10% of school board budgets.

Federal contributions to education. In 1971-72, universities and colleges received more than 78% of their operating funds from the federal and provincial governments. Private schools and colleges are normally supported by student fees, endowment income, gifts and income from sponsoring bodies.

In 1971-72, federal government expenditures on education amounted to an estimated \$928 million excluding monies transferred to provinces under the terms of the Federal-Provincial Fiscal Arrangements Act; of this, some \$256 million was spent at the university level, and expenditures on non-university post-secondary education, including vocational training, amounted to \$462 million. Finally, direct expenditures by the federal government on elementary-secondary education and teacher training accounted for \$210 million.

Some 66 federal government departments and agencies contribute to education in one way or another. As stated previously, the federal government has no responsibility for the organization and administration of education. It has, however, a vital interest in the quantity and quality of education, the skills of the population and the extent of scientific research carried on in Canada, realizing the effect of these on the national economy and on individual and social development.

During the past few years, federal support to education has undergone significant change. As a result of the federal-provincial conference of October 1966, the federal government undertook to provide increased support to education. Recognizing that education is a provincial responsibility, it decided to discontinue payment of operating grants directly to universities and to expand its support beyond university education and included in its program all, or almost all, post-secondary education, i.e. the educational institutions and courses requiring for admission at least junior matriculation, or its equivalent, in each province. The provinces were offered the choice of either a federal per capita grant of \$15 based on population or 50% of operating costs of post-secondary education, whichever was greater. Implementing this proposal, Parliament passed the Federal-Provincial Fiscal Arrangements Act in March 1967. This Act authorized the transfer of specific percentages of federal revenue plus required cash from the federal treasury to the provinces for a five-year period commencing with the 1967-68 fiscal year.

The financial resources transferred to the provinces were \$422 million in 1967-68; for succeeding years they were \$530 million in 1968-69, \$654 million in 1969-70, \$786 million in 1970-71, \$880 million in 1971-72, and \$987 million in 1972-73. The amount to be transferred to the provinces in 1973-74 is estimated at \$1,067 million.

Under the Adult Occupational Training Act the federal government, through the Department of Manpower and Immigration, provides occupational training to adults who are or plan to be members of the labour force. If, in the opinion of a manpower counsellor at a Canada Manpower Centre, it is in the best interest of the individual and of the economy for an adult to undertake training or retraining, the person may be placed in a training place purchased by the federal government from a public or private training institution or from industry. The program also provides for payment of allowances to persons whose training programs have been arranged by a manpower counsellor. Payments range between \$40.00 and \$128.00 a week, depending on the individual's economic responsibilities.

Under the Canada Student Loans Act (RSC 1970, c.S-17), full-time students may borrow up to \$1,400 annually to a total of \$9,800. Loans are interest-free while the student is enrolled and for six months thereafter. Provision is made for the total amount allocated to this program to be increased year by year in proportion to the increase in enrolment in post-secondary institutions. The purpose of the loan plan is to assist those students who, for financial reasons, would otherwise be prevented from acquiring a post-secondary education or would not be able to devote full-time to their studies. These loans may be made only on the basis of certificates of eligibility issued by the participating province. There is no upper or lower age limit for eligibility. Funds authorized by certificates of eligibility are issued by the chartered banks, the federal government guaranteeing the loans and paying the interest while the student is attending college. All provinces except Quebec participate; Quebec offers its own student assistance program for the benefit of residents of that province.

The Act provides for basic allocations for each province and also for supplementary allocations to compensate for differences in relative demand between provinces, based on provincial population in the 18-24-year age group. The basic allocations for the year 1971-72 for participating provinces totalled \$87.3 million with authority for discretionary allocations up to \$37.6 million, making a total maximum of \$124.9 million authorized under the Act. Loans actually authorized amounted to \$91.8 million. In addition, federal payments to lending institutions in respect of interest on outstanding loans and other operational expenses amounted to \$23.3 million.

In 1966, the federal government inaugurated a program of massive financial support to the provinces to provide badly needed facilities for training professional personnel in health services. The Health Resources Fund Act (RSC 1970, c.H-4), administered by the Department of National Health and Welfare, authorized the establishment of a fund to assist financially in the planning, acquisition, construction, renovation and equipping of health training facilities, defined to mean any school, hospital or other institution for the training of persons in the health professions or any occupations associated with the health professions, or for conducting research in the health field; residential accommodation was excluded. The Fund was established in the amount of \$500 million, to be applied to costs incurred between January 1, 1966 and December 31, 1980; of that amount, \$400 million is available to the provinces on a per capita basis, \$25 million is available to the four Atlantic Provinces for joint projects, and \$75 million remains to be allocated by the Governor in Council. Contributions are payable to the provinces in amounts of up to 50% of the cost of projects approved by the Minister's Advisory Committee as part of a five-year plan for the development of health training facilities in a province.

During the first five years of operation of this program, 1966-67 to 1970-71, the federal government paid \$143.2 million to the provincial treasuries in respect of approved projects. Projects financed under this program included training facilities in universities or institutions connected with, or operated by, schools of medicine, schools of nursing, including new regional schools of nursing in Ontario, and schools for nursing assistants, as well as facilities for vocational types of training at the higher educational levels.

Through the Canada Council, the federal government in 1957 provided an amount of \$100 million, half of which was to be distributed among the universities for specified building and equipment purposes, similar to the distribution of grants. Interest from the remaining \$50 million was to be used to assist in the development of the arts, humanities and social sciences, mainly through scholarships (see Section 7.3.3).

Other contributions are more indirect and include scholarships, research grants and reports or services of value to the schools. Research grants are made by the National Research Council, the Defence Research Board, the Department of National Health and Welfare, the

Department of Manpower and Immigration and other agencies. Some departments — Agriculture and National Health and Welfare, among others — provide materials and publications of value in the school programs; and the National Museums of Canada, the National Gallery, the National Film Board and the Canadian Broadcasting Corporation contribute directly or indirectly to various school programs.

More directly, the federal government is responsible for the education of Indians, members of the Armed Services and their dependents, and in-service training for permanent personnel and inmates of federal penitentiaries. It also assists in citizenship training and other out-of-school informal education activities.

External education assistance. The Canadian International Development Agency is responsible for the operation and administration of the technical assistance program offered by the Canadian government to developing countries. The International Development Research Centre, Canadian-financed but international in character, supports and assists research into the economic and social problems faced by developing countries. The activities of both organizations are described in Chapter 3.

7.2 Statistics of schools, colleges and universities

The first two tables concerning this Section give summary statistics of education at elementary, secondary and tertiary levels. Changes in enrolments at the three levels between 1968-69 and 1972-73 are shown in Table 7.1 and detailed data on numbers of schools, teachers and enrolment in the different types of institutions in each province and the territories are presented in Table 7.2.

7.2.1 Enrolments

7.2.1.1 Elementary and secondary enrolment

The combined elementary and secondary school enrolment increased each year until 1970-71, but at a decelerated rate. The trend has now been reversed. Between 1970-71 and 1971-72 the combined enrolment declined less than 1%, but between 1971-72 and 1972-73 the decline was almost 2%. The declines are due to decreased enrolments at the elementary level only, a result of the low birth rates in the mid-1960s. At the secondary level, however, enrolments were still increasing, reflecting the upsurge in the numbers of students at the beginning of the 1960s resulting from the high birth rates prevailing in the immediate postwar years. This growth is occurring in every province almost without exception as pupils attending elementary school in the 1960s move into the higher grades. This increase is also related in part to the fact that students are staying in school longer, and larger numbers of them are planning to go on to some form of post-secondary education. In addition, the greater diversification of courses offered which better prepare students for entry into the labour force and which more adequately fulfil the needs of the community, as well as the greater accessibility to further education, appears to affect school retention rates.

Table 7.3 shows enrolment in all elementary and secondary schools in Canada including National Defence schools overseas in 1971-72 by grade, and Table 7.4 shows the same enrolment by age.

Only 2.5% of all elementary-secondary school students were enrolled in private schools in 1971-72. In almost every province, these schools are being integrated into the public school system, possibly because of the improving quality of public education throughout the country, and rising costs associated with private education. Table 7.5 shows that in the six-year period 1967-68 to 1972-73 enrolment in private schools in all provinces except Newfoundland and Ontario declined substantially, although there were year-to-year fluctuations within the period in most provinces. Quebec, however, reported a significant increase in 1971-72 and 1972-73 over the previous years, as did New Brunswick and British Columbia in 1972-73.

7.2.1.2 Post-secondary non-university enrolment

During recent years, enrolment in post-secondary non-university education has grown rapidly due partly to new organizational structures and partly to a range of new programs that comprise programs in teachers' colleges, hospital and regional schools of nursing, some universities, and especially in community colleges.

As shown in Table 7.6, in 1972-73 the 198,732 enrolments in post-secondary non-university education represented an increase of 71,902 students or 56.7% over the previous year. Of

the total enrolment, community colleges and related institutions accounted for 87.0% and universities for 5.5%. Enrolments in teachers' colleges and in hospital and regional schools of nursing decreased between 1971-72 and 1972-73 due to more teacher training programs being given in universities and nursing programs in community colleges. It is expected that within a few years no teachers' colleges or hospital or regional schools of nursing will remain in operation. Table 7.7 shows enrolment at the post-secondary non-university level by field of specialization and by sex for 1967-68 to 1970-71, and by field of specialization for 1971-72.

As shown in Table 7.8, community colleges in all provinces except Newfoundland, Prince Edward Island, New Brunswick, Ontario and Manitoba offer university-transfer programs. In 1972-73, 63,219 students were enrolled in these programs, representing an increase of 15.3% over the previous year and 127% over 1968-69, the extremely large increase over the five-year period being due almost entirely to the introduction of the CEGEP system in Quebec.

7.2.1.3 University enrolment and graduate degrees conferred

During the 1968-69 to 1972-73 period, full-time university enrolment in Canada increased by approximately 55,600 students, or 21%. However, the rate of increase declined over the period from a high of 10.6% between 1968-69 and 1969-70 to 4.4% between 1970-71 and 1971-72. Between 1971-72 and 1972-73 enrolments declined by 1,612 students, representing a one half of 1% decrease (Table 7.9). Quebec and Ontario, the most populous provinces, accounted for more than 62% of all university and college enrolments.

It should be noted that, in addition to the full-time university-grade enrolment, the number of students enrolled in pre-matriculation or university-grade courses on a part-time basis, either in the evenings, during summer session or by correspondence, was equal to more than half of the full-time enrolment in the regular winter session in 1971-72.

Table 7.10 shows that during the five-year period 1966-67 to 1971-72 the number of degrees granted continued to increase, bachelor and first professional degrees by 70%, masters' degrees by 95% and earned doctorates by 121%. The proportion of women receiving these degrees has been approximately the same in all provinces.

In 1971-72, as in 1961-62, a large percentage of women graduated in courses traditionally considered to be of interest to women (Table 7.11). More than 83% of the bachelor and first professional degrees conferred on women were in arts and fine arts, education, humanities and related subjects, library science, nursing, and social sciences and related subjects; on the other hand, the proportion of men receiving first professional degrees in these fields was significantly lower, and has increased only slightly, from 50% to 54%, over the 10-year period. The percentage of women to total first and professional degrees granted in law, pharmacy and architecture has shown some increase recently but the proportion of women receiving these degrees to total first and professional degrees conferred on women has not.

Women received 22.6% of all graduate-level degrees and diplomas awarded by the universities (Table 7.12). Further, women were awarded 23.3% of the diplomas conferred, 24.8% of the masters and 9.3% of the doctorates. In relation to first professional degrees, over 80% of the graduate degrees and diplomas conferred on women were in education, the humanities and related subjects, and the social sciences and related subjects; at the same time, 33.1% of the men graduated in science and related subjects.

Each year Canadian universities and colleges admit a large number of students from other countries of whom a growing proportion come from countries other than the United States and Britain. In the 1971-72 academic year, of 28,758 full-time students from all countries, 13,046 were from Commonwealth countries; in 1972-73, students from outside Canada numbered 33,366, of whom 15,124 were from the Commonwealth. Historically, most of the foreign students in graduate schools in Canada have been males; consequently, the number of such students should be considered, for example, when analyzing the proportion of female enrolment and graduate degrees conferred on women to total enrolment and degrees granted. In 1970-71 male enrolments constituted 82.2% of the 22,376 students coming from other countries.

7.2.1.4 Registrations in continuing education programs

Students in continuing education courses (all levels) in 1971-72 are shown in Table 7.13. In 1971-72, adult enrolment in these courses totalled 1,141,027, with the highest proportion registered in courses given by school boards, 41.6%, followed by universities with 34.8%.

Three provinces, Quebec, Ontario and British Columbia, accounted for 78.9% of the national total. Ontario led Canada's back-to-school movement in 1971-72 with 414,367 students. As shown in Table 7.13, correspondence courses represent another avenue by which adults may continue their education. In 1971-72 there were an estimated 74,268 individual participants.

Table 7.14 shows the participation rates, as at June 1, 1972, of the population aged 15 years and over and not enrolled full-time at an educational institution. Of this group almost one person in every 10 was participating in this back-to-school movement. Residents of British Columbia and Prince Edward Island were the most active where participation rates per 1,000 population reached 131 and 120 respectively.

Table 7.15 gives the number and percentage of registrations in non-credit courses by course type for adults in the regions across Canada. It should be noted that these are total individual registrations and should not be interpreted as the number of persons attending courses.

In the non-credit course programs offered by school boards, universities, and colleges, general interest courses accounted for almost three quarters (72%) of the 740,107 non-credit course registrations reported. Home arts, and fine arts and craft courses were the most popular. Together they accounted for almost 45% of the general interest course registrations in Canada.

Professional development and refresher courses accounted for approximately 23% of the non-credit course enrolment. Courses related to business and management were the most popular for Canada (35.7%) except in Quebec where courses related to the health sciences accounted for one third of that province's enrolment.

In the association diploma programs which made up the balance of the non-credit course registration (5%), courses related to the field of accounting represented approximately 50% of all registrations. Banking courses, however, were most popular in the Atlantic region accounting for approximately one third of that region's total.

Table 7.16 shows that part-time university and college enrolment in 1971-72 and 1972-73 was quite high. In 1971-72, 84.6% and in 1972-73, 81.8% of the students were enrolled in undergraduate degree, diploma and certificate courses, 11.6% and 13.4% in 1971-72 and 1972-73 in graduate programs and 3.8% and 4.8% in non-university-level diploma or certificate courses.

7.2.2 Teaching staff

7.2.2.1 Elementary and secondary schools

During the 1950s and 1960s, the number of teachers in publicly controlled schools in Canada increased from 85,152 to 249,078, or by 193%. However, this steep upward trend is not expected to continue during the next few years. At the elementary level the increase will end because of the predicted decline in school enrolment.

As shown in Table 7.17, in 1971-72 male teachers at the secondary school level significantly outnumbered female teachers in eight provinces (data for Ontario and Quebec are not available) but the opposite is true for teachers at the elementary level.

The median salary in 1971-72 for all teachers (excluding Quebec and Ontario) was \$8,525, an increase of 334% over the median salary of \$1,965 in 1949-50. The rate of increase from one year to the next during the two decades fluctuated considerably, ranging from 2.4% in 1962-63 to 10.9% in 1971-72.

It should be noted that variations in median salaries do not necessarily indicate variations in the salary schedules on which teachers are being paid. Since salary scales are based on both years of education and years of teaching service, improvements in the teaching force based on either of these two factors could conceivably cause an increase in the median salary even though the salary scale remained constant. Thus, when the rise in the median is used for interprovincial or historical comparisons, the effects of other contributing factors should be taken into account.

The median salary of male teachers is higher than that of female teachers at both the elementary and secondary levels for all provinces shown. Although, proportionately, the female teachers have more years of experience, a greater proportion of the male teachers are university graduates. However, the proportion of teachers with university graduation has been rising steadily over the past few years, and this trend is expected to continue and should result in a corresponding decrease in the present salary differential.

7.2.2.2 Teaching personnel at post-secondary level

The number of instructors in community colleges and related institutions in nine provinces (excluding Quebec) was 4,434 in 1969-70 and the number in all provinces was 11,096 in 1971-72. Quebec alone reported 5,305 or 47.8% of all community college teachers; this can be explained by the large number of CEGEPs in that province. The figure for each province in 1971-72 is given in Table 7.2.

The number of full-time university teachers in Canada during the period 1967-68 to 1971-72 has risen by 70%, from an estimated 18,000 to 25,724, although the rate of annual increase has declined from 15.0% to 4.5%. These figures are based on returns from institutions representing 50% to 90% of the enrolment, depending on the academic year, and are consequently estimates.

As shown in Table 7.18, the median salary of university teachers in 1971-72 was \$15,084, an amount 5.9% higher than in the previous year. By rank, the median salary for deans was \$27,033, up 4.2% from the previous year; for professors, \$22,579 or 5.0% higher; for associate professors, \$16,848 or 4.9% higher; for assistant professors, \$13,321 or 4.9% higher; and for instructors and lecturers, \$10,521 or 5.2% higher.

Over the five-year period 1967-68 to 1971-72, the median salary of university teachers increased from \$11,403 to \$15,084 which represents an increase of 32%. During the same period, the increase in median salary was 31% for deans.

7.2.3 Expenditures

Table 7.19 contains information on education expenditures in Canada by source of funds. Responsibility for the organization and administration of public education lies with the provincial and territorial governments; in this capacity they represent the main source of funds for education. In 1971, 59.6% of all funds for education came from provincial governments, followed by municipal governments with 21.3%; federal government, 11.9%; fees, 3.9%; and other sources, 3.3%.

In 1971, expenditures on education totalled \$8,241.7 million, an increase of 98.3% over the 1966 figure of \$4,155.2 million. The proportion of funds provided by the provincial government on education has increased during the period, while the proportions derived from the federal government, municipal governments, fees and other sources have decreased.

In Table 7.20, expenditures on education are given by level of study. Elementary and secondary education accounted for \$5,472.9 million or 66.4% of the total. Expenditures on post-secondary education followed with 27.9% and on vocational training with 5.6%.

In 1971 expenditures for vocational training were 87.9% higher than they were in 1966. During the same period expenditures for elementary and secondary and for university levels increased by 96.0% and 90.5%, respectively.

7.3 Cultural education

7.3.1 Art schools and galleries

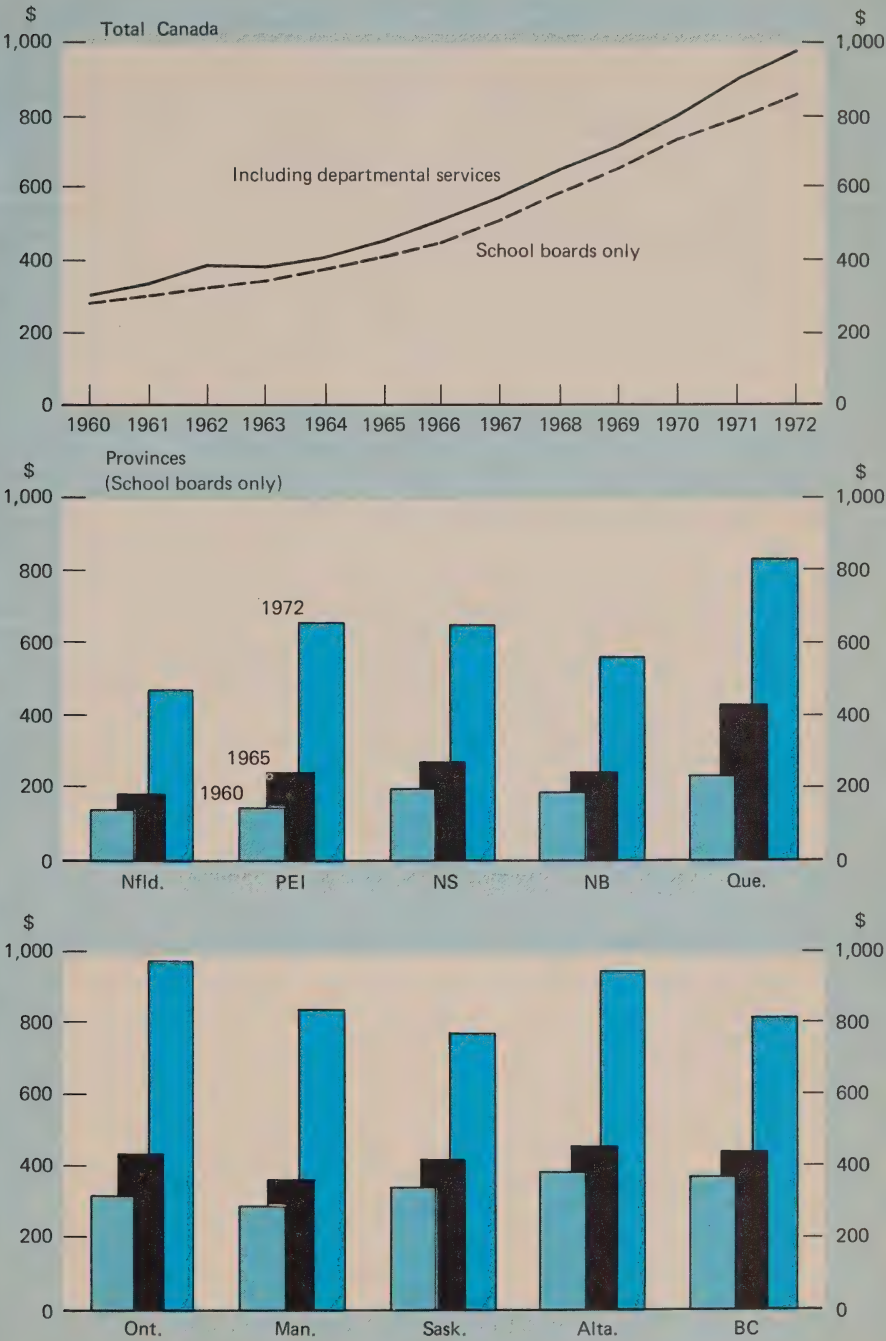
There has been considerable expansion of education opportunities in the arts in Canada in the past few years. Courses of artistic content have increased to some extent in the universities but the main growth has taken place in the newly established community colleges of Ontario and the *collèges d'enseignement général et professionnel* (CEGEPs) of Quebec. These colleges offer both the transfer diploma which allows the student to continue his studies at university, and the vocational diploma with which the student may seek employment in his area of specialty. There are also independent institutions, such as the Artists' Workshop in Toronto, the National Theatre School in Montreal and the Kootenay School of Art in Nelson, BC, where instruction is given with or without diploma awards.

Table 7.21 shows the facilities available for the study of the arts in Canada in 1970-71 as reported by 39 universities, 67 colleges and 15 independent institutions.

7.3.1.1 Fine arts schools, galleries and organizations

Fine arts (architecture, painting and drawing, commercial and decorative arts, graphics, ceramics and sculpture) appears as an elective subject of the faculty of arts in a number of universities, where it may be taken as one of five, six or more subjects for a year or two. Eight universities offer a Bachelor of Fine Arts degree: Mount Allison University, Sir George Williams University, University of Windsor, University of Manitoba, University of Alberta,

Cost per pupil of elementary and secondary education, regular public schools, 1960-72



University of Calgary, University of British Columbia, and the University of Victoria. Twelve universities offer a Bachelor of Arts degree with a major in Fine Arts: Université de Moncton, McGill University, Sir George Williams University, University of Ottawa, University of Toronto, York University, McMaster University, University of Guelph, University of Western Ontario, University of Windsor, University of Saskatchewan, and the University of British Columbia.

There are many colleges and schools of art with varying academic requirements for admission. These offer diploma or certificate courses and are concerned largely with the technical development of the artist. Among those widely known are Halifax — Nova Scotia College of Art; Quebec City — École des Beaux-Arts; Montreal — École des Beaux-Arts, Institut des Arts Appliqués, School of Art and Design of the Montreal Museum of Fine Arts; Toronto — Humber College of Applied Arts and Technology, Ontario College of Art, Artists' Workshop, Hockley Valley School, The New School of Art; Brampton — Sheridan College of Applied Arts and Technology; Kitchener — Doon School of Fine Arts; Winnipeg — University of Manitoba School of Art; Regina — School of Art, Regina Campus, University of Saskatchewan; Banff — Banff School of Fine Arts; Calgary — Alberta College of Art, Southern Alberta Institute of Technology; Nelson — Kootenay School of Art; Vancouver — Capilano College, Vancouver School of Art; Victoria — University of Victoria.

Courses vary in length with the requirements of the individual student but may extend over as many as four years. In some of these schools fine crafts as well as fine arts are taught. Summer schools of art are sponsored by some of the foregoing institutions, by universities and by various independent groups. One of the more important summer schools is the Banff School of Fine Arts, affiliated with the University of Calgary.

Public art galleries in the principal cities perform valuable educational services among adults and children. Children's Saturday classes, conducted tours for school pupils and adults, radio talks, lectures and concerts are features of the programs of the various galleries. Many of these institutions supply travelling exhibitions for their surrounding areas or range even farther afield. Several organizations such as the Maritime Art Association, the Atlantic Provinces Art Circuit, the Western Canada Art Circuit, the Art Institute of Ontario, the Art Gallery of Ontario and the new *Fédération des centres culturels du Québec* have been founded to carry out this sort of travelling program on a regional basis. On a smaller scale, art circuits are organized to serve certain areas such as those around St. John's Nfld., Charlottetown, PEI, Trois-Rivières and Hull, Que., and Winnipeg, Man. The National Gallery of Canada conducts a nation-wide program of this nature and is one of the largest art-circulating agencies in North America. Several galleries maintain an art-rental service.

Among the principal public art galleries are:

Confederation Art Gallery and Museum, Charlottetown, PEI
 Beaverbrook Art Gallery, Fredericton, NB
 Musée du Québec, Quebec, Que.
 Musée d'Art Contemporain, Montreal, Que.
 National Gallery of Canada, Ottawa, Ont.
 Art Gallery of Ontario, Toronto, Ont.
 Art Gallery of Hamilton, Hamilton, Ont.
 Art Gallery of Brant, Brantford, Ont.
 Cobourg Art Gallery, Cobourg, Ont.
 The McMichael Collection of Art, Kleinburg, Ont.
 The Robert McLaughlin Gallery, Oshawa, Ont.
 Tom Thomson Memorial Gallery and Museum of Fine Art, Owen Sound, Ont.
 Art Gallery of Windsor, Windsor, Ont.
 Kitchener—Waterloo Art Gallery, Kitchener, Ont.
 Public Library and Art Museum, London, Ont.
 Sarnia Public Library and Art Gallery, Sarnia, Ont.
 Brandon Allied Art Council, Brandon, Man.
 Winnipeg Art Gallery, Winnipeg, Man.
 Moose Jaw Centennial Art Museum, Moose Jaw, Sask.
 Saskatoon Gallery and Conservatory Corporation, Saskatoon, Sask.
 Dunlop Art Gallery, Regina Public Library, Regina, Sask.
 Saskatchewan Power Corporation Art Gallery, Regina, Sask.
 Edmonton Art Gallery, Edmonton, Alta.
 Calgary Allied Arts Centre, Calgary, Alta.

Glenbow—Alberta Institute Art Gallery, Calgary, Alta.
 Vancouver Art Gallery, Vancouver, BC
 Art Gallery of Greater Victoria, Victoria, BC.

Other important collections of art are housed in arts councils and university galleries. Among the university galleries are:

St. John's Memorial University Art Gallery, St. John's Nfld.
 Acadia Students' Union Art Gallery, Wolfville, NS
 Anna Leonowens Gallery, Nova Scotia College of Art, Halifax, NS
 Mount Saint Vincent University, Halifax, NS
 Saint Mary's University Art Gallery, Halifax, NS
 Dalhousie University Art Gallery, Halifax, NS
 Creative Art Centre of the University of New Brunswick, Fredericton, NB
 Owens Museum of Fine Arts, Mount Allison University, Sackville, NB
 Université de Moncton, Moncton, NB
 Le Galerie d'art, Université de Sherbrooke, Sherbrooke, Que.
 Séminaire des Clercs de St-Viateur, Joliette, Que.
 Galerie d'art Nova et Vetera Kébec, Collège de Saint-Laurent, Montreal, Que.
 Sir George Williams University Art Gallery, Montreal, Que.
 Agnes Etherington Art Centre, Queen's University, Kingston, Ont.
 Canadiana Department of the Royal Ontario Museum, Toronto, Ont.
 York University, Toronto, Ont.
 McMaster University Art Gallery, Hamilton, Ont.
 University of Waterloo Art Gallery, Waterloo, Ont.
 McIntosh Memorial Art Gallery, University of Western Ontario, London, Ont.
 University of Manitoba, Winnipeg, Man.
 Norman Mackenzie Art Gallery of the University of Saskatchewan, Regina, Sask.
 University of Saskatchewan, Saskatoon, Sask.
 University of Alberta, Edmonton, Alta.
 University of Calgary, Calgary, Alta.
 Alberta College of Art Gallery, Southern Institute of Technology, Calgary, Alta.
 University of Lethbridge Art Gallery, Lethbridge, Alta.
 Fine Arts Gallery of the University of British Columbia, Vancouver, BC
 The Simon Fraser Gallery, Simon Fraser University, Burnaby, BC
 Kootenay School of Art Gallery, Nelson BC.

Five of the more important galleries connected with arts councils are the St. Catharines and District Arts Council, St. Catharines, Ont., the Glenhyrst Arts Council, Brantford, Ont., the Department of Fine Arts, McMaster University, Hamilton, Ont., the Brandon Allied Arts Centre, Brandon, Man., and the Art Gallery of the Calgary Allied Arts Centre, Calgary, Alta.

Among the leading fine arts organizations of national scope, exclusive of museums and art galleries, are: Association of Canadian Industrial Designers, National Design Council, Canadian Conference of the Arts, Canadian Craftsmen's Association, Canadian Society for Education through Art, Canadian Group of Painters, Canadian Guild of Potters, Canadian Handicrafts Guild, Canadian Museums Association, Canadian Society of Graphic Art, Canadian Society of Painter-Etchers and Engravers, Canadian Society of Painters in Water Colour, Canadian Society of Landscape Architects, Federation of Canadian Woodcarvers, Royal Canadian Academy of Arts, Royal Architectural Institute of Canada, Sculptors' Society of Canada, Town Planning Institute of Canada, Canadian Centre for Films on Art, and Community Planning Association of Canada.

7.3.1.2 Performing arts schools

Degree courses in music, the most widespread of the performing arts (which also include opera, drama, ballet and dance) are offered at a number of Canadian universities, listed as follows:

St. Francis Xavier University, Antigonish, NS — BA major
 Dalhousie University, Halifax, NS — BMusEd
 Mount Saint Vincent, Halifax, NS — BA (mus.)
 Acadia University, Wolfville, NS — BA major, LMus, and BMus
 Mount Allison University, Sackville, NB — BA major, BMus, BMed
 Université de Moncton, Moncton, NB — BA (mus.)
 Université Laval, Quebec, Que. — LMus, BMus, DMus
 McGill University, Montreal, Que. — LMus, BMus, MMA (musical arts)
 Université de Montréal, Montreal, Que. — LMus, BMus, and DMus

Carleton University, Ottawa, Ont. — BA (mus.)

Queen's University, Kingston, Ont. — BMus, BA major

University of Toronto, Toronto, Ont. — BMus, BA (mus.), ArtDipMus, LicDipMus, MusBac (performance), MusBac (history, literature, composition, education), MusM, MA (musicology), MusDoc, PhD (musicology)

McMaster University, Hamilton, Ont. — MusBac

University of Western Ontario, London, Ont. — BA major, MusB, MA (musicology), and MusM

University of Windsor, Windsor, Ont. — BA (mus.) and BMus

University of Manitoba, Winnipeg, Man. — BA major, AMM, LMM and BMus

Brandon University, Brandon, Man. — BMus (education or performance)

University of Saskatchewan, Regina, Sask. — AMus, LMus, BMus, BMusEd

University of Saskatchewan, Saskatoon, Sask. — BA major, BMus, BMusEd

University of Lethbridge, Lethbridge, Alta. — BA (mus.)

University of Alberta, Edmonton, Alta. — BMus and MMus

University of Calgary, Calgary, Alta. — BMus

University of British Columbia, Vancouver, BC — BA major, BMus and MMus

University of Victoria, Victoria, BC — BMus, MMus, PhD (mus.).

Advanced instruction in music is also given at the *Conservatoire de Musique et d'Art Dramatique* in both Montreal and Quebec. Opera may be studied at the Royal Conservatory Opera School of the University of Toronto where advanced students work in close collaboration with the Canadian Opera Company and also at the *Conservatoire de Musique et d'Art Dramatique* and at the Banff School of Fine Arts (summer) at Banff, Alta., an affiliate of the University of Calgary.

Degree courses in drama are offered at the following universities:

Université de Moncton, Moncton, NB — BA (art dramatique)

Sir George Williams University, Montreal, Que. — BFA (drama)

Queen's University, Kingston, Ont. — BA (drama)

University of Toronto, Toronto, Ont. — MA (drama)

University of Windsor, Windsor, Ont. — BA (drama), BFA (dramatic art)

University of Saskatchewan, Regina, Sask. — BFA (drama)

University of Saskatchewan, Saskatoon, Sask. — BA (drama), MA (drama)

University of Alberta, Edmonton, Alta. — BA (drama), MA (drama), BFA (drama), MFA (drama, design or directing)

University of Calgary, Calgary, Alta. — BFA (drama)

University of British Columbia, Vancouver, BC — BA (theatre), MA (theatre)

University of Victoria, Victoria, BC — BFA (theatre).

Advanced instruction in drama is also given during the summer at the Banff School of Fine Arts. The National Theatre School of Canada offers complete practical training for talented students; it is bilingual, courses being held at Montreal, Que., from October to June. Three years are required for the acting course and two for technical and production studies.

The National Ballet School at Toronto is the only residential ballet school in Canada. It offers academic studies together with practical instruction. Professional instruction is also offered by two other major Canadian ballet companies, *Les Grands Ballets Canadiens*, Montreal, and the Royal Winnipeg Ballet, Winnipeg, and advanced ballet training is given during the summer at the Banff School of Fine Arts.

7.3.2 Museums

The museums of Canada, as elsewhere, range from small collections of locally-gathered historical artifacts and objects to large government-operated institutions which collect, classify and display such objects as may be useful to the study and teaching of natural history, human history, science and technology, with special but not exclusive reference to Canada. Many of these larger museums, especially the components of the National Museums of Canada and the Royal Ontario Museum, have a long, distinguished heritage in research and publication of scholarly works and are important educational and cultural centres. They offer many educational services to the public through exhibits, guided tours, lectures and scientific and popular publications.

7.3.2.1 Educational programs

In 1970, 140, or 19.8%, of all museums and related institutions in Canada maintained educational programs. The following museums have staff members who are specifically charged with organizing programs in education and providing extension services: Nova Scotia

Museum, Halifax, NS; McGill University museums, Montreal, Que.; National Museums of Canada, Ottawa, Ont.; Royal Ontario Museum, Toronto, Ont.; and Saskatchewan Museum of Natural History, Regina, Sask.

Other museums that conduct educational and extension programs using the regular curatorial and administrative staff are: The New Brunswick Museum, Saint John, NB; Musée du Québec, Quebec, Que.; Manitoba Museum of Man and Nature, Winnipeg, Man.; British Columbia Provincial Museum, Victoria, BC.

Direct work with schools may involve the holding of classes within the museum or visits of museum lecturers, with exhibits, to the schools. More informal are the guided tours for visiting school classes, loans of specimens, slides, filmstrips or motion picture films to schools, and the training of student-teachers in the educational use of the museum. For children, a number of museums have special programs not directly associated with school work including Saturday lectures and film showings, activity groups, nature clubs and field excursions. At the higher educational level, museum field parties provide research training to university students in many disciplines and museum staffs act as professional consultants, answer a host of inquiries on scientific and technical subjects, and serve as consultants or advisers to foreign scholars and institutions. There were 288, or 40.7%, of the museums and related institutions conducting research related to collections in 1970.

For adults, museums offer lectures, film shows and guided tours, the latter usually available throughout the year. Staff members may give lectures to service clubs, church groups, parent-teacher associations and hobby clubs. The latter, such as naturalists' groups, mineral clubs and astronomy societies, may be allowed to use the museum as their headquarters. Travelling exhibits are prepared for showing at local fairs, historical celebrations and conventions. Some Canadian museums have conducted regular radio or television programs and others have made occasional contributions. Some historical museums stage annual events during which the arts, crafts or industries represented by the exhibits are demonstrated to the public.

Table 7.22 presents results of a survey completed by Statistics Canada for the year 1970. Some 55 million visits were made to 708 Canadian museums, art galleries and related institutions, including the National Museums of Canada; of these, 2.9 million were in groups arranged by schools, churches and other organizations. The institutions were staffed by 3,793 full-time and 3,157 part-time employees, and 6,515 volunteers. Their operating expenditures reached almost \$40 million, and only 38.5% charged admission fees.

7.3.2.2 National Museums of Canada

The responsibilities of a museum include collecting, preserving and storing objects related to the various disciplines within its area of activity. Of equal importance is the research carried out by specialists in these fields and the publication of their findings. Museums exhibit artifacts from their collections in attractively designed displays to illustrate the scientific origins of the various subjects. Lectures, publications, inquiries, consultations, workshops, guided tours for children and adults, travelling exhibits, loans, library services and radio and television programs are also part of the National Museums' programs.

In 1972 the National Museums of Canada, a Crown corporation including the National Gallery of Canada, the National Museum of Science and Technology, the National Museum of Man and the National Museum of Natural Sciences, was charged with the administration of the National Museum Policy. This Policy is intended to provide Canadians with better access to the objects, collections and exhibits that form part of the Canadian cultural heritage through the decentralization and democratization of exhibitions.

The Policy involves small and large museums in all regions of the country. Smaller institutions are encouraged to upgrade their receiving and exhibition facilities so that they may exhibit a range of travelling exhibits and collections from other institutions. The Policy also provides for the development of exhibition space, either through mobile display units or by building new display facilities, in remote localities which have not previously been served by a museum or art gallery.

Implementation of the National Museum Policy is carried out under 11 programs: associate museums, national exhibition centres, special grants, training assistance, catalogue assistance, emergency purchase fund, education and extension, national loan collection, museumobile, national inventory, and conservation. For these 11 programs, \$1.1 million was provided to initiate the Policy in 1972-73 and \$13.4 million to continue in 1973-74.

The Board of Trustees of the National Museums of Canada created a Consultative Committee on National Museum Policy, chaired by the Vice-Chairman of the Board and consisting of two representatives from the Secretary of State Department, a representative of the Canada Council, two members appointed by the Chairman of the Board from nominees submitted by the Canadian Museums Association and two members similarly appointed from the Canadian National Committee for the International Council of Museums.

In addition to this a Secretariat to the Consultative Committee on National Museum Policy has been established within the National Museums of Canada which assists the Consultative Committee and the Board of Trustees in carrying out the first eight of these programs. The Corporation also operates the Museumobile, which is a travelling caravan to bring museum exhibits to remote communities, and administers the National Inventory, which holds computerized data on all museum collections across the country. The Canadian Conservation Institute has responsibilities for the conservation and restoration program.

The early history of the National Museums is described in the *1972 Canada Year Book* pp 418-419. Recent activities of the museums are outlined below.

The National Gallery of Canada. The beginnings of the National Gallery of Canada are associated with the founding of the Royal Canadian Academy of Arts in 1880. The Marquis of Lorne, then Governor General, had recommended and assisted in the founding of the Academy and among the tasks he assigned to that institution was the establishment of a National Gallery at the seat of government. Until 1907 the National Gallery was under the direct control of a Minister of the Crown but in that year, in response to public demand, an Advisory Arts Council consisting of three persons outside government was appointed by the government to administer grants to the National Gallery. Three years later, the first professional curator was appointed.

In 1913, the National Gallery was incorporated by Act of Parliament and placed under the administration of a board of trustees appointed by the Governor General in Council; its function was to encourage public interest in the arts and to promote the interests of art throughout the country. Under this management, the Gallery increased its collections and developed into an internationally recognized art institution. Today, a board of trustees reporting to the Secretary of State administers all the National Museums of Canada, including the National Gallery, under the National Museums Act (RSC 1970, c. N-12).

The Gallery's collections have been built up along international lines and give the people of Canada an indication of the origins from which their own traditions are developing. The collection of Canadian art, the most extensive and important in existence, is continually being augmented. Over 60% of all new acquisitions since 1966 have been Canadian. The present Canadian content of the permanent collections is: paintings, 79%; sculpture, 66%; prints, 17%; drawings, 61%; and all other acquisitions, 74%. There are now more than 12,200 works of art in the collections. Included are many Old Masters, 12 having been acquired from the famous Liechtenstein collection. The Massey collection was presented to the Gallery during 1946-50 by the Massey Foundation. The Vincent Massey Bequest of 100 works was received in 1968. Other important gifts and bequests of Canadian and European art include the Douglas Duncan Collection (1970) and the Bronfman Gift of Drawings (1973). There is a growing collection of contemporary art, prints and drawings, and diploma works of the Royal Canadian Academy. The services of the Gallery include the operation of a reference library open to the public containing more than 42,000 volumes and periodicals on the history of art and other related subjects.

In 1972 the Gallery's National Conservation Research Laboratory underwent change. It had been established in 1964 to provide technical information on works of art from public and private collections across Canada and to be responsible for the conservation of the national art collections. In addition, research was carried out on the effects of environment on works of art and on the durability of artists' materials. The latter role was given to the newly constituted Canadian Conservation Institute with the broadened responsibility of conducting research into methods of preserving, restoring and transporting all types of cultural objects, the training of specialists in these fields, and the provision of consultant services to museums. The new Institute remains a part of the National Museums of Canada. The National Gallery retains its conservation function, which was established long before the creation of the National Conservation Research Laboratory. This division of the Gallery has been designated as the Restoration and Conservation Laboratory.

An active program of exhibitions, lectures, films and guided tours is maintained for visitors to the Gallery in Ottawa. The interests of the country as a whole are served by circulating exhibitions, lecture tours, publications, reproductions and films prepared by the National Gallery staff. Promotion of and information on art films are handled by the Canadian Centre for Films on Art, and their distribution by the Canadian Film Institute. The Gallery promotes interest in Canadian art abroad by participating in international exhibitions such as the Biennials of Venice and Paris, and by preparing major exhibitions of Canadian art for showing in other countries in collaboration with the Department of External Affairs. It also brings important exhibitions from abroad for showing in Canada.

The National Museum of Natural Sciences has divisions of Botany, Zoology, Geology, Mineralogy, and Palaeontology. During 1973 thousands of specimens were added to its collection as a result of field trips, purchases, donations and exchanges.

The Museum staff was engaged during the year in 65 major research projects and 25 projects of lesser importance. It supported such research as the Polar Continental Shelf Project and the Hudson and Sackville expeditions undertaken by the Department of Energy, Mines and Resources. The Museum supports projects undertaken in universities by staff members or by research associates and provides financial assistance, research facilities and field work for several National Research Council post-doctoral fellows.

The Canadian Oceanographic Identification Centre of the Museum processes and identifies approximately 400,000 specimens each year, mainly for government departments at all levels.

The Museum staff produces publications and prepares audio-visual material for various educational institutions.

The National Museum of Man comprises the Canadian Centre for Folk Culture Studies, the Archaeological Survey of Canada, the Canadian War Museum, and the Divisions of Ethnology, History and Communications.

During 1973 the Archaeological Survey of Canada continued its work on about 100 sites across Canada with emphasis on sites in immediate danger of being destroyed by human or natural forces such as the Mackenzie pipeline corridor and the Mackenzie highway project. Other government departments have also recognized the importance of this work and have made contributions to the Museum. The joint ASC-Saskatchewan Research Council archaeological dating program was in its second year of operation with over 100 samples being catalogued.

The Ethnology Division continued to provide advisory services to museum specialists and the general public on Indian, Eskimo and Métis cultures of Canada. Staff research continues on Beothuk, Abenaki, Algonquian, Iroquois, Plains Indian, Athapaskan, Gitskan (BC) and Labrador-Eskimo cultures and languages. A substantial range of contract research work covering many areas of Canadian and native cultures was undertaken as part of the ethnology program that is seeking to record the fast-disappearing traditional cultures and languages of Canadian native peoples. There were significant additions to the ethnology collection, notably the Speyer collection of 18th- and 19th-century Great Lake and Eastern Canadian material.

The History Division continued studies on Canadian society and material culture from the beginnings of European colonization, including such subjects as public attitudes toward Indians in western Canada before World War I, coal mining in Nova Scotia, the status of women in Upper Canada, lighting devices prior to electricity, Windsor chairs, Canadian-made stoves, and the work of Canadian silversmiths. The rate of acquisition of historical objects rose sharply in 1973. It exceeded 8,000 items including consumer product containers and everyday objects, a complete 19th-century Ontario cabinet maker's shop, about 20 outstanding Ontario furniture pieces, Centennial gifts received and donated by the former Governor General, the Rt. Hon. Roland Michener and Mrs. Michener, a large donation of 19th-century glassware and a silver presentation plate originally given to Sir Charles Tupper. Canada's Visual History, a co-operative venture of the National Museum of Man and the National Film Board entailing the preparation and dissemination of photographic essays, was well under way in 1973.

The Canadian Centre for Folk Studies conducted research on the impact of community, cultural environment and folk legacy on an individual within a Prairie Ukrainian society. Cantometric analysis was introduced in the music archives and a study was made on Gaspé's toponymies. The Centre began work on ethnic community monographs based on field

research in a typical rural Prairie settlement founded by Hungarian immigrants. The project will consider material culture, social organization, ethnic relations, folk arts and crafts, as well as customs and religious traditions. The Centre completed folk culture studies of Canadian Welsh and Breton groups and research on a unique form of French-Canadian architecture, the "block-house". Research on bread-ovens among French-Canadians and on Italian food has bolstered knowledge of culinary anthropology. Research contracted by the Centre has produced field studies on the Canadian gypsies, Kashubian festival customs, Danish folklore, and an architectural inventory of traditional Orthodox churches in Saskatchewan.

The Canadian War Museum featured major exhibitions in 1973 including an exhibition illustrating Polish-Canadian co-operation in two world wars, the "Overlord Embroidery" and Naval paintings of World War II. Nearly 6,000 specimens were added to the Museum's collection, including General Wolfe's magnifying glass, medical records written in Mercurochrome at the Canadian prisoner of war camp at Hong Kong, and a professionally made model of the frigate HMS Princess Charlotte. Major research was directed to the storyline for the permanent World War II exhibit. Of particular importance was the War Museum's publication *Canada Invaded* by G.F.G. Stanley. The lecture and military film programs continued to attract a wide audience in 1973.

The Communications Division plans and co-ordinates the interpretation and exhibition program in the permanent exhibit halls in the Museum and organizes travelling exhibitions. Fourteen travelling exhibitions and 18 temporary exhibits including "Quebec Furniture: 1700-1820" and "Canada's Multicultural Heritage" were on tour across Canada in 1973. The Division has also implemented a successful National School Loans program, which this year made 1,126 loans to schools across Canada, most of which were in areas remote from museums. A prototype Edukit composed of artifacts and complementary print and audio-visual material has been completed for distribution to schools under this program. In addition to its public relations functions and contributions to the National Museums of Canada Museumobile projects, the Division published five exhibition brochures and catalogues, the 1972-73 *Annual Review* and a catalogue of education aids.

Since the closing in 1969 of the Victoria Memorial Museum Building which houses the National Museum of Man, extensive renovation, exhibit planning and work on displays for the nine major halls has continued to occupy a large portion of staff time. In 1973 the first two floors were near completion and designs for the history and folk culture halls were approved; they were opened in October 1974.

Staff scientists attended a number of national and international conferences, lectured widely, acted as advisers for other institutions and countries, taught university courses, trained students, participated in planning exhibits in other museums and assisted with projects in other Canadian centres. The Museum's publication program has been substantially expanded, the Mercury series (in which manuscripts by Museum scientists are released in photocopy form) being particularly well received; and the Bulletin series of professional scientific writings was enlarged.

The National Museum of Science and Technology. November 1967 saw the opening of the National Museum of Science and Technology as the newest of the four National Museums. This Museum challenges over 650,000 visitors a year to climb, push, pull or just view its definitive collections. An additional 160,000 annually visit the National Aeronautical Collection.

The exhibit pavilions contain examples from the history of ground transportation such as sleighs, streetcars, steam locomotives and antique cars, to aviation and space, beginning with Canada's first powered heavier-than-air flight. There are also "seeing puzzles", explosives and skill-trying tests in the physics hall; transport; meteorology; time pieces; a model workshop and astronomy.

Housed at Rockcliffe Airport is the Museum's National Aeronautical Collection. Over 90 aircraft illustrate the progress of aviation from primitive to present times and the importance of the flying machine in the discovery and development of Canada. Included is one of the world's largest collections of aircraft engines.

A staff of tour guides conducts general or topic-oriented tours for all age groups. A 10,000-volume library places special emphasis on a retrospective collection of Canadian aviation. The Science Museum also participates in the creation of distinct exhibits, many of which

are sent on tour. The annual Canada Day activities include rides in vintage automobiles, stage coaches and a steam train. Also during the summer months a steam train makes a return trip from Ottawa to Wakefield, Que. each Sunday.

7.3.3 The Canada Council

The Canada Council was created in 1957 by an Act of Parliament, to "foster and promote the study and enjoyment of, and the production of works in the arts, humanities and social sciences". It carries out its task mainly through a broad program of fellowships and grants of various types. It also shares responsibility for Canada's cultural relations with other countries in co-operation with the Department of External Affairs. The Council is made up of a chairman, a vice-chairman and 19 members, all appointed by the Governor in Council. Its administration is headed by a director and an associate director, also appointed by the Governor in Council, and meets at least five times a year.

Within the limits of the Canada Council Act, the Council enjoys a large measure of autonomy, setting its own policies and developing and carrying out its own programs in consultation with the community of artists and scholars. The Council reports to Parliament through the Secretary of State and also appears before the Standing Committee on Broadcasting, Film and Assistance to the Arts.

The Council's income is derived from three sources: an annual grant of the Canadian government which amounted to \$32.1 million for the year ended March 31, 1973; the Endowment Fund established by Parliament when it created the Council, which is expected to yield \$5 million annually; and private funds willed or donated to the Council and used in accordance with the wishes of the donors.

Assistance to the humanities and social sciences accounts for the larger part of the Council's budget, an amount of \$20.2 million in 1972-73. In support of research training, the Council awarded 1,955 doctoral fellowships totalling \$8.8 million; for research work, 325 leave and research fellowships totalling \$2.6 million and \$4.2 million in research grants; for research communication, a total of \$1.7 million in assistance to learned meetings, visiting professors, attendance of Canadian scholars at international conferences, and publication of learned journals and scholarly manuscripts. Through the Canadian Horizons Program, the Council spent \$619,000 to assist in projects to make Canada's cultural heritage better known to the public.

In the arts, the Council spent \$15.5 million of which \$1.9 million was used to finance some 807 grants, bursaries and awards to individuals in the various art forms, and \$13.4 million was applied to grants to organizations, including \$3.1 million for music, \$3.7 million for theatre, \$2.3 million for dance and opera, \$2.4 million for the visual arts (including \$1 million on the Art Bank), \$300,000 for cinema and photography, and \$1.5 million for writing and publication.

The Canada Council administers, on behalf of the Canadian government, part of a program of cultural exchanges with France, Belgium, Switzerland, the Federal Republic of Germany, Italy, the Netherlands and the Latin American countries, under which it awarded fellowships and grants totalling \$875,000 to citizens of those countries in 1972-73. The Council also administers the funds of the Canadian Cultural Institute in Rome, created in 1967 by an agreement between Canada and Italy. The Institute's income is used to provide a small number of fellowships for Canadian artists and scholars wishing to work or study in Italy. The Izaak Walton Killam Memorial Awards of the Canada Council were inaugurated in 1967 with funds from the Killam estate. These awards go to support a few scholars of exceptional ability engaged in research projects of far-reaching significance. In 1972-73, there were 22 awards made under this program, totalling \$609,000.

Under its power to "make awards to persons in Canada for outstanding accomplishments in the arts, humanities or social sciences", the Council annually awards three \$15,000 Molson prizes from a fund created by the Molson Foundation. The Governor General's Literary Awards, financed by the Council, are awarded annually to six Canadian writers.

The Canada Council Act provides for certain functions in relation to the United Nations Educational Scientific and Cultural Organization. It has accordingly established a National Commission for UNESCO and provides its secretariat and budget. As an agent of the Council, the Canadian Commission for UNESCO co-ordinates UNESCO program activities abroad and administers a modest program in furtherance of UNESCO objectives.

7.3.4 Provincial assistance to the arts

During recent years provincial governments, as well as other levels of government and industry, have become more and more aware of the significance of the arts in the life of the community. All provinces except Prince Edward Island now give some form of financial assistance to artists (writers, poets, painters and sculptors), cultural organizations or community councils. New Brunswick now provides some assistance to choral groups and cultural organizations, and occasionally makes grants to writers. The assistance provided by the other provinces is described in the following paragraphs.

Newfoundland. The Cultural Affairs Division of the Department of Tourism contributes to the upkeep of cultural centres in the province and provides grants, awards and subsidies to individuals or groups native to or touring the province for performances. Grants and awards enable local theatrical groups to produce and perform in centres around the province. For 1974 the provincial government has budgeted \$50,000 for these grants and a further \$175,000 for subsidies to enable nationally known companies and groups to perform in the province at centres which normally would be unable to hire them. Subsidies also enable centres such as the Marine Museum in St. John's to purchase works for exhibition.

Nova Scotia. This province has no specific legislation authorizing financial assistance for cultural advancement but the Departments of Education and of Finance among others provide grants to a number of organizations. Payments are made under the Provincial Finance Act from departmental appropriations.

In the year ended March 31, 1973 grants totalling \$167,700 were paid out by the Department of Education, including \$90,000 to the Neptune Theatre Foundation, \$45,000 to the Atlantic Symphony Orchestra and \$15,000 to the Nova Scotia Museum of Fine Arts.

The Department of Finance contributed to: Hector Bi-Centennial Celebration Committee, \$25,000; Nova Scotia Festival of the Arts, \$7,000; Theatre Arts Festival International, \$17,912; Nova Scotia Museum of Fine Arts, \$15,000; and a total of \$13,500 to various other organizations. The Department of Tourism contributed to: Annapolis Valley Apple Blossom Festival, \$3,825; Antigonish Highland Society, \$2,000; Festival of the Tartans, \$2,500; Gaelic College of Celtic Folk Arts, \$10,000; Pictou Lobster Festival, \$2,500; and \$6,325 to other organizations.

The Fine Arts and Handcrafts section of the Adult Education Program of the Department of Education operated on a budget of \$142,000 and disbursed small grants for instructional purposes to various cultural organizations. The Nova Scotia Museum section of the Cultural Services Program of the Department of Education operated under a budget of \$944,000 and disbursed grants to local museums and historical societies. Other expenditures in the Department of Education included: Nova Scotia Provincial Libraries, \$1,360,200; Publication and Information, \$139,800; and Audio-Visual Services, \$216,600.

Quebec. The Department of Cultural Affairs was established on March 24, 1961 by an Act of the provincial legislature. The Department was charged with the administration of cultural organizations or institutions such as libraries, museums, archives and conservatories. It also is responsible for artistic, literary and scientific competitions and for the *Office de la langue française*, the Department of French Canadian Affairs outside the province, the Provincial Arts Council, the Historic Monuments Commission, the Museum of Contemporary Art, the Montreal Museum of Fine Arts, the *Place des Arts* and the *Grand Théâtre* of Quebec.

There are six main branches. The Management Branch supplies administrative services. The Literary Affairs Branch implements legislation on literary matters and books, including public libraries and library buildings, literary and scientific competitions, publishing insurance, the National Library of Quebec, and Orders in Council dealing with publishing and book distribution. During 1972-73 the Library Service of the Branch distributed \$1.7 million and a total of 110 libraries and the Literary Affairs and Books Service made grants to associations and publishers totalling \$154,900.

The Graphic Arts Branch administers the Quebec Museums Act, the Montreal Museum of Fine Arts Act, the "One per cent Act" and the Order in Council establishing the Committee responsible for implementing that Act, as well as the Order in Council setting up the Acquisitions Board of the Quebec Museum. This Branch also provides assistance to artists to allow them to show their works. During 1972-73 the Branch allotted \$379,750 to associations and creative artists in this field.

The Heritage Branch is responsible for implementing acts regarding objects of cultural interest. It is also required to supply any necessary technical and financial assistance to preserve, maintain and develop Quebec's heritage. This Branch co-ordinates and supervises archaeological and ethnological research, protects natural and historic sites, preserves manuscripts, furniture and buildings of historic significance; catalogues, acquires and preserves private, semi-public and public archives; and keeps an up-to-date inventory of works of art. During 1972-73 the Heritage Branch allotted \$3.8 million to the restoration and renovation of historic properties.

The Film and Audio-visual Branch advises all departments and organizations of government on films and audio-visual material, produces films and audio-visual materials, and distributes visual materials ordered or sponsored by government departments and organizations. During 1972-73, its production budget reached \$2.7 million.

The Performing Arts Branch plans and directs the Department's instructional and financial role by assisting various presentations of the performing arts. It also administers the Conservatories Act. During 1972-73 the Branch allocated \$1.3 million to musical organizations and \$1.6 million to the theatre.

The Cultural Relations Branch assists in bringing foreign companies and individuals to encourage the development of Quebec's cultural resources. In addition, the Regional Cultural Development Branch helps to stimulate local creativity.

Ontario. The Ministry of Colleges and Universities, through its Cultural Affairs Division, allocated in 1973-74 the following amounts: the Ontario Arts Council, \$5.1 million; the Royal Ontario Museum, \$5.0 million; the Ontario Heritage Foundation, \$1.0 million; the McMichael Canadian Collection of Art, \$491,000; the Art Gallery of Ontario, \$1.2 million; the Royal Botanical Gardens, \$300,000; Festival Ontario, \$250,000; grants to local museums, \$300,000; libraries, \$13.8 million; Ontario Educational Communications Authority, \$7.0 million; the Elliot Lake Centre for Continuing Education, \$230,000; and the Ontario Science Centre, \$4.4 million.

The prime function of the Division is to obtain, co-ordinate, and present budgets and multi-year plans for the 13 cultural agencies it serves and the three cultural programs it administers. The Division co-ordinates not only these agencies and programs, but also cultural programming by the seven Ontario Ministries involved in such work.

The Province of Ontario Council for the Arts was established by legislation in 1962 to promote the study, enjoyment and production of works in the arts; to assist, co-operate with and enlist the aid of organizations whose objectives are similar to those of the Council; to provide through appropriate organizations, or otherwise, for grants, scholarships or loans to persons in Ontario for study or research in the arts in Ontario or elsewhere, or to persons in other provinces or territories of Canada or any other countries for study or research in the arts in Ontario; and to make awards to persons in Ontario for outstanding accomplishments in the arts. The Arts Council contributes to such organizations as the National Ballet of Canada, the Toronto Symphony Orchestra, the Toronto Arts Foundation, the Canadian Opera Company, the Stratford Shakespearean Festival and the Shaw Festival. In addition it makes grants to individuals and organizations in the performing and creative arts and to regional programs, touring and sponsorship programs and educational programs in the arts.

Ontario Place, a 96-acre entertainment and exhibition complex on three man-made islands in Lake Ontario on the Toronto waterfront, opened May 22, 1971. In its first three years of operation more than 7 million people have visited Ontario Place, 2.9 million of them in 1973. The works of Ontario film-makers, artists, designers and writers are displayed on the grounds. An 8,000-seat amphitheatre presents concerts by groups such as the Toronto Symphony, the National Ballet and the Royal Winnipeg Ballet, as well as rock and jazz concerts and opera. A 300-boat marina, restaurants, lounges and gift boutiques are part of the attraction.

Manitoba. The Manitoba Arts Council was formed by legislation passed in 1965 providing for a chairman, vice-chairman and 10 members appointed by the Lieutenant Governor in Council, with the objective of promoting the study, enjoyment, production and performance of works in the arts by assisting and co-operating with those organizations involved in cultural development, providing for grants, scholarships or loans to Manitobans for study or research in the arts and making awards to citizens of Manitoba for outstanding accomplishments in the

arts. Working on a budget of \$376,000, the Manitoba Arts Council in the year ended March 31, 1973, made grants to 27 organizations, including \$65,000 to the Manitoba Theatre Centre, \$42,500 to Rainbow Stage, \$80,000 to the Royal Winnipeg Ballet, and \$74,000 to the Winnipeg Symphony Orchestra.

The Manitoba Arts Council provided assistance to Manitoba artists and writers through an experimental awards program.

Saskatchewan. In 1949, the Saskatchewan Arts Board was established by Act of the Legislature, with the stated aim of providing "opportunity for the people of Saskatchewan to participate in visual art, music, drama, literature, handicrafts and other cultural pursuits; to stimulate and encourage this participation and appreciation".

The Saskatchewan Arts Board, funded by the provincial government but functioning independently, is composed of not less than seven nor more than 15 volunteer members appointed annually by the Lieutenant Governor in Council. These members are from all parts of the province but represent no specific areas or any specific disciplines in the arts. The work of the Board is carried out by a staff of two consultants and three office personnel under an executive director. Experts in various fields of the arts are engaged for specific projects.

Over the years, handicraft, visual and performing arts programs have been expanded to the point where in some areas they have reached the professional level. Workshops, lectures and seminars at an advanced level have been sponsored by the Board, and considerable assistance has been given to local arts and crafts organizations in sponsoring similar projects at a local level. In most cases, the Board prefers to assist established organizations in carrying out their own programs.

A highly successful Saskatchewan Summer School of the Arts, operated annually by the Saskatchewan Arts Board at Echo Valley Centre near Fort Qu'Appelle, offers one- to four-week courses in band, orchestra, stage band, choral singing, piping and drumming, highland and national dancing, ballet, painting, pottery, acting, creative writing and weaving, with instruction by qualified teachers.

For five years from 1965, the annual month-long Saskatchewan Festival of the Arts focused attention on the arts in communities throughout the province by presenting top-calibre artistic performances and exhibitions. This Festival has been replaced by similar programs planned by individual communities to meet their specific needs.

Each year, the Board has provided financial assistance to individual provincial artists to help them further their artistic training, or to establish themselves at a professional level. Individual assistance is based primarily on financial need, with scholarship and artistic ability as important factors. Emphasis is placed on assisting those in undergraduate studies or those striving to achieve professionalism. In 1973, the Board awarded a total of \$19,880 in individual assistance to 38 applicants.

The total budget of the Saskatchewan Arts Board in 1973 was \$419,500. Financial assistance extended to organizations included \$37,000 to Globe Theatre Productions Limited, \$30,000 to the Regina Symphony, \$30,000 to the Saskatoon Symphony, \$3,700 to the Yorkton International Film Festival, \$17,500 to the Saskatchewan Music Festival Association, \$9,315 to the Saskatchewan Youth Band, \$6,451 to the Saskatchewan Youth Chorus, \$1,566 to the Saskatchewan Youth Orchestra, \$3,400 to West Wind Film Group, \$1,578 to twenty-fifth street house/New Century Theatre, \$3,780 to the provincial arts councils, \$2,400 to the Saskatchewan Society for Education Through Art, \$2,745 to the Saskatchewan Writers' Guild, \$1,800 to the Saskatchewan Region D.D.F., \$1,950 to the Kinsmen International Band Festival, \$1,500 to the Saskatchewan Dance Theatre, \$1,750 to The Group (photographers), \$8,000 to Cherry Films, \$7,200 for Community Artist programs in four cities, \$1,000 to the Norman Mackenzie Art Gallery, and \$1,000 to the Shoestring Gallery. In all, major assistance totalling more than \$214,000 was awarded to 62 groups and organizations in 1973.

Alberta. The Cultural Development Division of the Department of Culture, Youth and Recreation was set up after passage of an Act of the Legislature in 1946 providing for "encouragement of the cultural development of the people of this Province". The Act has since been amended several times to give it greater flexibility.

The Division is interested in the promotion of all forms of art and public libraries. Its program is intended to give opportunity to the public to witness the best in performing arts tours and art exhibitions; to conduct training courses at regular intervals for a variety of leaders, par-

ticularly teachers in the public school system and instructors at special institutions such as those for the mentally and physically handicapped, the aged, or inmates of penal institutions; to provide consultative services for cultural organizations throughout the province; and to give financial assistance to individuals, local amateur and professional institutions and provincial government organizations whose aims are the development of the arts. Awards to individuals wishing to further their training in some form of the arts amount to over \$250,000 annually. The Alberta Art Foundation was established by legislation in 1972, and has been allocated \$50,000 annually for the purchase of Alberta arts and crafts. The budget of the Division for the year ended March 31, 1974 was in excess of \$1.7 million.

The Division is also involved in ethno-cultural development, offering consultative services and financial assistance in nearly all areas affecting cultural heritage. The Alberta Film Censor Board is now attached to the Division for purposes of administration.

British Columbia. The British Columbia Cultural Fund was set up by statute in 1967. That Act set aside \$5 million in an endowment-type fund, the interest from which was to be spent "for stimulation of the cultural development of the people of the Province". In September 1967 an advisory committee was established to receive applications for cultural grants and to report their recommendations to the Department of Finance for the necessary funds. The amount of the endowment was raised to \$10 million in 1969, and to \$15 million in 1972.

Up to December 31, 1973, grants totalling almost \$4.1 million had been awarded by the Fund to support cultural activities throughout the province. The Fund also provides a small degree of financial support to the National Theatre School, the National Youth Orchestra, the Canadian Theatre Centre and the Canadian Music Centre.

Grants totalling \$1.2 million were made in the fiscal year 1972-73, of which about 70% went to major non-profit organizations such as symphony, drama and opera societies. About 19% of the grants in each year went to Community Arts Councils and the remainder to art acquisitions, scholarships, seminars and miscellaneous grants. For 1973-74 grants totalling \$1.4 million had been awarded up to December 31, 1973.

7.4 Federal film agencies

7.4.1 National Film Board

The National Film Board, an agency of the federal government, was established by Act of Parliament in 1939 and reconstituted by the National Film Act in 1950 "to initiate and promote the production and distribution of films in the national interest". The Board's films are produced in Canada's two official languages and have made a considerable contribution to the country's culture and to the national identity. In addition to 35mm and 16mm films, the Board produces and distributes other visual aids material — filmstrips, 8mm loop films, slide sets, overhead projectuals, multi-media kits and photo stories.

The growing sophistication of film audiences and the increasing importance of film as a means of communication are reflected in the nature of the films produced — features, documentaries, informational films, films for the specific needs of government departments, and films designed for particular social purposes. The Board strives to serve as innovator of new cinema techniques, as well as a recorder of the nation's day-to-day evolution. Thus, new needs and greater public sensitivity have encouraged the Board's film-makers to explore new film styles and to experiment in new areas of film production, and there have been corresponding new departures in the distribution and use of films as more people turn to films as a matter of course for information and assistance in many activities.

In Canada, the Board's productions are distributed through community outlets, schools and universities, television stations, theatres and commercial sales. In all these areas annual figures show a steady and, in some instances, a marked increase. A large part of the 16mm community film audience is reached through film libraries, film councils and special-interest groups. The growing demand for films can be attributed to the wide range of subject matter available; the Board's catalogue lists 60 main and sub-categories. Original films are shown regularly over English- and French-language television networks in Canada as well as in theatres. During 1973-74 over 17,000 commercial bookings were made for NFB's theatrical short films. There were also almost 400,000 screenings of films from NFB's 27 regional libraries.

NFB film distribution outside Canada also continues to increase. The Board's films are seen at most of the world's international film festivals with gratifying response from judges, film critics and audiences. Film distribution abroad is promoted by the Board's offices in New York, London, Paris, New Delhi and Tokyo, and by posts of the Departments of External Affairs and of Industry, Trade and Commerce. NFB films are shown in theatres of more than 100 countries. In 1973-74, NFB films were seen by an estimated 766 million people around the world, at a per capita cost to Canadians of about 78 cents. To increase the usefulness of films about Canada abroad, the Board makes foreign-language versions of some films in many languages, and language versions are also made under contract with television networks and school film distributors in other countries. The Board co-operates with the Canadian Government Travel Bureau to distribute films in support of the Canadian travel industry to appropriate audiences in the United States, Europe and other areas.

7.4.2 Canadian Film Development Corporation

The Canadian Film Development Corporation was established in March 1967 to promote the development of a feature film industry in Canada, and in so doing it co-operates with federal and provincial departments and agencies with similar interests. It invests in Canadian productions in return for a share of the profits, makes loans to producers and assists in the distribution of feature films. The Corporation also makes awards for outstanding accomplishments in production. It has recently extended its financial assistance to increase emphasis on promotion, marketing and distribution of productions.

Since its creation the Corporation has invested \$13.6 million in the production of 136 films with a combined budget of \$35.9 million. These films provided 596 assignments for Canadian directors, producers and production managers, 7,294 roles for actors and 1,939 jobs for technicians in the Canadian film industry. Moreover, laboratories have earned more than \$4.2 million and equipment rental companies more than \$2.4 million.

In 1973-74, the Corporation participated financially in the production of 19 feature films, of which nine were original French-language productions (including three co-produced under the France-Canada co-production treaty) and 10 were in English (five produced in Toronto, four in Montreal and one in Vancouver). Three of these films were produced under the terms of the Special Investment Program, designed to assist film-makers to direct their first feature film and ensure a strong future in the Canadian film industry. Their budgets were limited to \$115,000. They were selected from 21 French-language and 49 English-language proposals, and were produced in Quebec, Ontario and British Columbia.

In addition, the Corporation invested in 11 projects at the pre-production stage, in the English "dubbing" costs of eight French-language films produced in Quebec, and in nine promotion campaigns for theatrical release of films already produced with its assistance.

The combined budgets of the 19 feature films amounted to \$7.1 million. The Corporation invested \$2.6 million, or 37% of the total.

By September 1974, 118 feature films produced with the Corporation's assistance were being distributed — 34 more than at the end of the preceding fiscal year. As of March 31, 1974, the Corporation had recovered \$1.8 million of the money invested in feature films since its inception — \$786,028 in 1973-74, \$339,745 in 1972-73, and the balance in previous years. Only a small percentage of the returns came from English-language films in 1972-73, but this rose considerably in 1973-74 and the Corporation expects the improvement to continue in 1974-75.

The Secretary of State, through the Canadian Film Development Corporation, made an agreement in July 1973 with Famous Players and Odeon (the two most important theatre chains in Canada) and Canadian distributing companies. The agreement provides for commercial presentation of Canadian 35mm feature films produced or dubbed in English for a period of at least two weeks in Montreal, Toronto and Vancouver. It was anticipated that this guaranteed launch would assure most of the CFDC-assisted English-language pictures with a springboard into the Canadian market. Famous Players agreed to show two thirds of the films, and Odeon one third. As part of this agreement, the CFDC increased its investment in those films to help distributors and producers defray initial promotion and publicity costs.

The Corporation has also assisted some Canadian feature-length French-language productions which might be expected to have difficulty in finding an audience, through similar

agreements, but has left complete responsibility for financing the promotion of their own commercial product to Quebec distributors.

The Corporation is also taking steps to encourage the distribution of Canadian feature films abroad. In co-operation with the Festivals Office of the Department of the Secretary of State, it supports the market aspect of the Cannes Festival and looks for every possible way of assisting Canadian producers to sell their films abroad. One film which the Corporation supported in 1970, *The heart farm* (now re-titled *The only way out is dead*) has been sold in at least 27 countries, while another, *Fortune and men's eyes*, has also been seen in at least 30. *Les males* and *La vraie nature de Bernadette* are also continuing successful careers abroad. Twentieth Century-Fox, the distributor of *The Neptune factor*, reported in March 1974 that the film had grossed \$2.3 million in the United States, the United Kingdom and several other countries.

In 1973-74, the Indian Government invited Canada to present a week of Canadian cinema in that country. As a result, the Indian Government purchased the distribution rights to four Canadian feature films.

An increasing number of Canadian features are being invited to international film festivals, and the film markets usually organized in conjunction with these festivals now provide a significant opportunity for international sales. Sixty-five short-, medium- and feature-length films produced by private industry won 81 prizes between January 1, 1973 and the end of March 1974. In Canada, the Canadian Film Awards held a competition for dramatic feature length films; *Slipstream* was judged the best feature film of the year, and *Kamouraska* won the special jury prize.

More Canadian feature films were also shown on Canadian television than in previous years.

7.5 Public archives and library services

7.5.1 The Public Archives

The Public Archives was established in 1872 and now operates under the direction of the Dominion Archivist by authority of the Public Archives Act. It serves a dual role. As a research institution, it is responsible for acquiring from any source all significant documents relating to the development of the country and of value to Canada, and for providing suitable research services and facilities to make this material available to the public. As an essential part of the government administration, it has broad responsibilities in regard to the promotion of efficiency and economy in the management of its records.

The Historical Branch comprises seven divisions. The Manuscript Division contains manuscript collections, including private papers of statesmen and other distinguished citizens, records of cultural and commercial societies, and copies of records relating to Canada and now held in France, England and other countries. The holdings of the Public Records Division consist of selected records of all departments and agencies of the Government of Canada. The Picture Division has charge of documentary paintings, water colours, engravings and photographs relating to people, historical events, places and objects. The National Film Archives has an extensive collection of films and sound recordings. The Map Division has custody of thousands of maps and plans pertaining to the discovery, exploration and settlement of this country and its topography, as well as a large collection of current topographical maps of foreign countries. The Library contains more than 80,000 volumes on Canadian history, including numerous pamphlets, periodicals and government publications. The Machine-Readable Archives Division holds selected automated public records and machine-readable archives of permanent value from the private sector.

Although documents in the Archives may not be taken out on loan, they may be consulted in the building, and a 24-hour-a-day service is provided for accredited research workers. Reproductions of available material may be obtained for a nominal fee on request and many of the documents in the Manuscript Division are on microfilm and may be obtained on inter-library loan.

The Records Management Branch assists departments and agencies in the setting up and operation of their records management programs. Its service also includes recommendations and advice on scheduling and disposal of records. At the Ottawa, Toronto, Montreal, Vancouver, Winnipeg and Halifax records centres, it provides storage, reference service and plan-

ned and economical disposal of dormant records. Other regional centres are being established in major cities across Canada.

The Administration and Technical Services Branch, in addition to an extensive conservation and restoration program, provides a technical and advisory service on microfilming to government departments and agencies. Microfilm work is done for departments at cost. It also provides a full range of services to the National Library.

Branch offices of the Public Archives are located in London, England and Paris, France. The Archives also administers Laurier House in Ottawa as an historical museum.

7.5.2 Library services

7.5.2.1 The National Library

The National Library was formally established on January 1, 1953 by Act of Parliament. On the same date it absorbed the Canadian Bibliographic Centre, which had been engaged in preliminary work and planning since 1950. The Library is now governed by the National Library Act, 1969 which broadened the powers of the National Librarian to whom is assigned the responsibility of co-ordinating government library services. The Act established a National Library Advisory Board consisting of 15 members.

The book collection now consists of more than 500,000 volumes, supplemented by microcopies of more than 100,000 additional titles. Newspaper files formerly in several locations have been brought together and now form the largest collection of Canadian newspapers in Canada.

The Library compiles and publishes *Canadiana*, a monthly catalogue of publications relating to Canada. It includes bibliographic descriptions of trade publications, official publications of the Government of Canada and the 10 provinces, and films, filmstrips and phonograph records produced in Canada, in addition to works by Canadians and material on Canada published abroad. More than 24,000 titles were included in 1973. Retrospective bibliographies are planned or in progress.

The Canadian Union Catalogue lists over 10 million volumes in about 300 government, university, public and special libraries in all provinces. New accessions (which numbered over 1.5 million in 1972-73) are reported regularly, and the Union Catalogue thus forms a continuously up-to-date key to the main book resources of the country. During the year ended March 31, 1973, the Reference Division was asked to locate more than 110,000 titles, and it is noteworthy that copies of 78% of them were found in Canadian libraries.

The Library has published a union list of serials in the fields of the humanities and social sciences currently received by Canadian libraries. This list is a first step toward a complete union list of such serials in the humanities and social sciences that will complement the *Union list of scientific serials in Canadian libraries* published by the National Science Library.

A list of books about Canada, prepared by the National Library, appears in Appendix 6.

7.5.2.2 The National Science Library

The functions and services of the National Science Library are described in Chapter 9, Section 9.6.

7.5.2.3 Public libraries

Public libraries in Canada are organized under provincial legislation which specifies the method of establishment, the services to be provided and the means of support. Municipalities may organize and maintain public libraries or join together to form regional libraries according to provincial legislation. Provincial public library agencies advise local and regional libraries and distribute grants.

Table 7.23 gives summary results of the annual public library survey for 1972, with comparable totals for 1971 and 1970. Book circulation was 95.7 million or 4.4 per capita. The current operating payments of all public libraries amounted to \$78.0 million or \$3.24 per capita compared with \$3.28 in the previous year. The full-time staff numbered 5,181 in 1972.

7.5.2.4 Libraries in universities and colleges

Libraries in 114 universities (including four-year affiliated or associated institutions) reported, for the academic year 1971-72, a total of 26.7 million volumes or 72.8 per full-time student. Expenditures of university libraries amounted to \$89.2 million or \$243 per full-time stu-

dent. The total full-time staff of the libraries numbered 6,949. Details by province are given in Table 7.24.

Table 7.24 also shows that libraries in 154 colleges (post-secondary institutions such as community colleges, CEGEPs, colleges of applied arts and technology, teachers' colleges, etc.) reported a total bookstock for 1971-72 of 4.4 million volumes or 29.1 per full-time student. Expenditures of these libraries amounted to \$12.1 million or \$80.04 per full-time student. Total library staff was 1,052.

Sources

- 7.1 Education, Science and Culture Division, Institutional and Public Finance Statistics Branch, Statistics Canada; Communications Division, Department of Indian Affairs and Northern Development; Territorial and Social Development Branch, Department of Indian Affairs and Northern Development; International Development Research Centre.
- 7.2 - 7.3.1 Education, Science and Culture Division, Institutional and Public Finance Statistics Branch, Statistics Canada.
- 7.3.2 Education, Science and Culture Division, Institutional and Public Finance Statistics Branch, Statistics Canada; The National Museums of Canada.
- 7.3.3 The Canada Council.
- 7.3.4 Supplied by the respective provincial governments.
- 7.4.1 The National Film Board.
- 7.4.2 The Canadian Film Development Corporation.
- 7.5.1 The Public Archives of Canada.
- 7.5.2 The National Library of Canada; Education, Science and Culture Division, Institutional and Public Finance Statistics Branch, Statistics Canada.

Tables

..	not available	e	estimate
...	not appropriate or not applicable	p	preliminary
—	nil or zero	r	revised
--	too small to be expressed	certain tables may not add due to rounding	

7.1 Full-time enrolment in schools, colleges and universities, 1968-69 to 1972-73 (thousands)

Type of institution	1968-69	1969-70	1970-71	1971-72	1972-73
SCHOOLS AT THE ELEMENTARY-SECONDARY LEVEL					
(including pre-grade one)	5,697.5	5,808.9	5,886.1	5,874.1	5,809.6
Elementary and secondary ¹	5,646.7	5,754.8	5,829.8	5,819.5	5,763.7
Kindergarten	326.8	355.1	348.0	333.2	340.8
Grades 1 to 8	3,844.1	3,837.2	3,813.3	3,765.4	3,562.8
Grades 9 and over	1,475.8	1,562.5	1,668.5	1,720.9	1,860.1
Private kindergarten and nurseries ²	46.9	50.0	52.2	50.5	42.0
Schools for the blind and deaf	3.9	4.1	4.1	4.1	3.9
POST-SECONDARY INSTITUTIONS					
Non-university ³	395.3	436.9	475.6	496.8	512.3
General programs	129.5	142.7	166.1	173.8	190.9
University transfer programs ⁴	101.7	105.5	117.5	119.0	127.7
University institutions	27.9	37.2	48.6	54.8	63.2
University programs	265.8	294.2	309.5	323.0	321.4
Non-university programs	265.5	292.9	308.1	315.1	310.5 ⁵
	0.3	1.3	1.3	7.9 ⁵	10.9 ⁶
Total	6,092.8	6,245.8	6,361.7	6,370.9	6,321.9

¹Public, private and federal.

²Includes estimates for Quebec and Saskatchewan.

³Includes teachers' colleges, hospital and regional schools of nursing, CEGEPs, community colleges and related institutions.

⁴Includes CEGEP academic enrolment.

⁵Includes Ryerson Polytechnical Institute enrolment.

⁶Includes students enrolled at the CEGEP level in English universities in Quebec.

7.2 Schools, teachers and enrolment, by level, type of institution and province, 1971-72

Item	Province or territory					
	Nfld.	PEI	NS	NB	Que.	Ont.
ELEMENTARY-SECONDARY LEVEL						
(including pre-grade one)						
Elementary and secondary schools						
Public						
Schools	781	187	660	553	4,300e	4,795
Teachers	6,648	1,639	9,869	7,956	78,000e	92,488
Students	162,818	30,570	214,780	175,997	1,568,671P	2,031,360
Federal						
Schools	—	1	4	7	28e	79
Teachers	—	4	26	27	205e	302
Students	—	66	565	671	4,658P	7,157
Private						
Schools	4	—	9	7	510e	270
Teachers	66	—	141	50	3,500e	3,658
Students	746	—	1,405	398	64,766P	43,949
Schools for the blind and deaf						
Schools	1	1	2	—	8	5
Teachers	22	5	97	—	278	294
Students	145	12	457	—	1,240	1,485
Private kindergarten and nursery schools						
Schools	1	8	10	20	..	386
Teachers	5	17	31	27	..	1,391
Students	70	277	266	437	1,500e	15,238
Total, elementary-secondary						
Schools	787	197	685	587	4,846e	5,535
Teachers	6,741	1,665	10,164	8,060	81,983e	98,133
Students	163,779	30,925	217,473	177,503	1,640,835e	2,099,189
POST-SECONDARY LEVEL						
Non-university institutions						
Community colleges and related institutions						
Institutions	2	1	6	2	63	29
Teachers	95P	38P	126P	86P	5,305e	3,168e
Students	848	391	1,098	702	84,260	37,981
Teachers' colleges						
Institutions	—	—	1	2	8	8
Teachers	—	—	71	75	60e	187
Students	—	—	797	707	736	3,057
Hospital and regional schools of nursing						
Institutions	4	1	7	9	35	58
Teachers	37	19	100	104	614	1,076
Students	700	193	998	1,007	785	9,307

7.2 Schools, teachers and enrolment, by level, type of institution and province, 1971-72 (continued)

Item	Province or territory					
	Nfld.	PEI	NS	NB	Que.	Ont.
POST-SECONDARY LEVEL (concluded)						
Universities and colleges						
Institutions ¹	1	1	11	4	8	21
Teachers	574	124	1,265	818	5,544	10,105
Students	7,077	1,771	16,291	10,952	62,819	134,419
Total, post-secondary						
Institutions	7	3	25	17	114	116
Teachers	706	181	1,562	1,084	11,523 ^e	14,536
Students	8,625	2,355	19,184	13,368	148,600	184,764
Total, elementary-secondary and post-secondary						
Schools and institutions	794	200	710	604	4,960	5,651
Teachers	7,447	1,846	11,726	9,144	93,506	112,669
Students	172,404	33,280	236,657	190,871	1,789,435	2,283,953
TRADE LEVEL						
Public schools	14	2	18	13	..	23
Teachers	396 ^p	83 ^p	206 ^p	286 ^p	..	1,857 ^e
Students ²	9,937	4,657	14,074	6,250	..	75,723
Total, all levels						
Schools and institutions ³	7,843	1,929	11,932	9,430	..	114,526
Teachers	182,341	37,937	250,731	197,121	..	2,359,676
Students						
	Man.	Sask.	Alta.	BC	YT and NWT	Canada ⁴
ELEMENTARY-SECONDARY LEVEL (including pre-grade one)						
Elementary and secondary schools						
Public						
Schools	726	1,021	1,259	1,497	22	15,812 ^e
Teachers	11,731	10,716	20,521	22,112	834	262,816 ^e
Students	244,452	243,579	427,968	524,305	16,015	5,645,084
Federal						
Schools	34	51	23	43	—	270 ^e
Teachers	247	165	171	145	—	1,292 ^e
Students	6,064	3,358	3,595	3,108	—	29,242
Private						
Schools	44	17	33	136	—	1,030 ^e
Teachers	464	127	311	1,305	—	9,622 ^e
Students	7,438	1,710	5,439	21,777	—	147,628
Schools for the blind and deaf						
Schools	2	1	1	2	—	23
Teachers	27	29	28	52	—	832
Students	147	175	148	283	—	4,092
Private kindergarten and nursery schools						
Schools	49	..	252	263	—	989 ^s
Teachers	117	..	442	532	—	2,562 ^s
Students	1,582	1,500 ^e	10,331	9,299	—	40,500 ^e
Total, elementary-secondary						
Schools	855	1,090	1,568	1,941	22	18,124 ^e
Teachers	12,586	11,037	21,473	24,146	834	277,124 ^e
Students	259,683	250,322	447,481	558,772	16,015	5,866,546 ^e
POST-SECONDARY LEVEL						
Non-university institutions						
Community colleges and related institutions						
Institutions	3	3	13	14	—	136
Teachers	260 ^p	194 ^p	859 ^p	965 ^p	—	11,096 ^e
Students	2,555	2,101	10,845	11,492	—	152,273
Teachers' colleges						
Institutions	—	—	—	—	—	19
Teachers	—	—	—	—	—	394 ^e
Students	—	—	—	—	—	5,297
Hospital and regional schools of nursing						
Institutions	6	3	13	9	—	145
Teachers	126	90	221	136	—	2,523
Students	1,153	335	1,782	1,331	—	17,591
Universities and colleges						
Institutions ¹	5	4	6	8	—	69
Teachers	1,385	1,210	2,248	2,451	—	25,724
Students	17,351	14,801	28,769	28,776	—	323,026
Total, post-secondary						
Institutions	14	10	32	31	—	369
Teachers	1,771	1,494	3,328	3,552	—	39,737 ^e
Students	21,059	17,237	41,396	41,599	—	498,187
Total, elementary-secondary and post-secondary						
Schools and institutions	869	1,100	1,600	1,972	22	18,493
Teachers	14,357	12,531	24,801	27,698	834	316,861
Students	280,742	267,559	488,877	600,371	16,015	6,364,733 ^e

7.2 Schools, teachers and enrolment, by level, type of institution and province, 1971-72 (concluded)

Item	Province or territory					
	Man.	Sask.	Alta.	BC	YT and NWT	Canada ^a
TRADE LEVEL						
Public schools	1	5	12	13	—	101 ^a
Teachers	230 ^p	210 ^p	416 ^p	344 ^p	—	4,028 ^{c,*}
Students ^a	8,314	10,148	17,932	29,537	—	176,572 ^a
Total, all levels						
Schools and institutions ^a					22	...
Teachers	14,587	12,741	25,217	28,042	834	...
Students	289,056	277,707	506,809	629,908	16,015	...

^aNumber of reporting institutions for enrolment.^bTotal registrations during the school year.^cFigures cannot be added, except in the territories, because some institutions are counted twice, once under trade schools and once under community colleges.^dIncludes DND schools outside of Canada.^eExcludes Saskatchewan and Quebec.^fExcludes Quebec.

7.3 Enrolment in elementary and secondary schools (public, private and federal), by grade and by province, 1971-72

Grade	Province or territory						
	Nfld.	PEI	NS	NB	Que. ¹	Ont.	Man.
Kindergarten ^a	12,927	10	15,652	177	105,428	152,772	16,755
Grade 1	14,475	2,790	17,102	14,975	130,599	158,181	20,924
Grade 2	14,776	2,817	17,796	15,356	133,075	163,667	21,455
Grade 3	14,281	2,770	18,247	15,872	131,064	162,250	21,013
Grade 4	14,615	2,917	18,448	15,948	125,425	160,521	20,825
Grade 5	14,498	2,732	18,011	15,892	131,010	161,202	21,170
Grade 6	14,327	2,686	18,105	15,751	134,228	160,977	20,758
Grade 7	14,657	2,664	18,510	16,510	76,329 ^a	159,211	20,746
Grade 8	13,159	2,614	17,574	15,971	156,233 ^a	152,375	19,084
Grade 9	12,290	2,737	16,604	14,650	146,873	170,765	19,147
Grade 10	10,629	2,137	14,975	14,140	142,686	155,066	18,174
Grade 11	9,708	1,723	12,806	11,049	124,118	128,765	16,517
Grade 12	114	1,443	9,035	9,557	101,027	108,586	14,955
Grade 13						56,637	
Special classes	3,108	596	3,885	1,218	—	31,491	6,431
Total	163,564	30,636	216,750	177,066	1,638,095	2,082,466	257,954
Grade	Province or territory						
	Sask.	Alta.	BC	YT	NWT	DND schools overseas	Canada
Kindergarten ^a	5,592	3,427 ^e	21,389	19	1,100	428	335,676
Grade 1	20,671	36,063	42,239	506	1,707	487	460,719
Grade 2	21,389	38,216	44,621	524	1,292	488	475,472
Grade 3	21,369	38,683	45,824	464	1,288	509	473,634
Grade 4	20,820	38,128	45,406	511	1,032	478	465,074
Grade 5	21,217	38,077	46,085	463	991	397	471,745
Grade 6	20,803	37,839	46,900	449	845	354	474,022
Grade 7	21,005	37,875	45,958	435	736	370	415,006
Grade 8	20,146	36,295	47,424	379	494	300	482,048
Grade 9	19,630	34,324	45,048	337	442	270	483,117
Grade 10	18,659	32,781	41,588	298	338	193	451,664
Grade 11	17,432	30,368	36,874	209	251	146	389,966
Grade 12	16,396	31,018	32,841	162	200	90	325,424
Grade 13	—	—	—	—	—	59	56,696
Special classes	3,518	3,908	6,993	50	493	—	61,691
Total	248,647	437,002	549,190	4,806	11,209	4,569	5,821,954

¹Preliminary data for public and private schools.²Excludes private kindergarten and nursery schools.³The elementary level includes Grades 1 to 6 and secondary level, Grades 7 to 11. It is possible to have an additional year of study between the two as a transition year.⁴Approximately 48.8% of pupils in Grade 8 came directly from Grade 6 (1970-71).

7.4 Enrolment in elementary and secondary schools (public, private and federal), by age¹ and by province, 1971-72

Age	Province or territory						
	Nfld.	PEI	NS	NB	Que. ^a	Ont.	Man.
5 years and under	14,860	661	17,340	5,758	228,438	183,514	21,713
6 "	13,515	2,302	16,473	13,628		149,383	18,812
7 "	13,635	2,532	17,197	14,333		158,857	20,015
8 "	13,612	2,608	17,391	14,889	662,577	161,954	20,813
9 "	13,349	2,661	17,673	14,835		162,198	20,828
10 "	13,334	2,740	17,526	14,882		163,630	20,689
11 "	13,168	2,654	17,502	14,411	628,468	162,563	20,883
12 "	13,140	2,595	16,992	14,705		159,534	20,093
13 "	12,921	2,500	16,877	14,939		155,762	19,597
14 "	12,670	2,625	16,921	14,703	112,888	153,108	19,461
15 "	11,825	2,341	15,593	13,695		148,000	18,991
16 "	9,467	2,095	13,636	12,261		135,044	17,661
17 "	5,354	1,430	9,716	8,518	5,524	109,437	12,733
18 "	2,089	589	3,952	3,605		58,532	3,981
19 ^a "	469	234	1,394	1,316		16,084	1,230
20 "	106	47	369	400	5,524	3,303	292
21 years and over	50	22	198	188		1,478	162
Total	163,564	30,636	216,750	177,066	1,638,095 ^a	2,082,466 ^a	257,954
	Sask.	Alta.	BC	YT	NWT	DND schools overseas	Canada
5 years and under	11,758	14,560	37,484	208	1,303	509	310,627
6 "	18,698	34,219	40,261	431	1,076	466	309,815
7 "	20,428	36,310	43,622	466	1,151	487	329,581
8 "	20,769	37,755	45,704	464	981	515	338,019
9 "	20,526	37,805	45,760	437	973	421	337,899
10 "	20,588	37,623	45,608	472	976	416	338,965
11 "	20,887	38,317	46,898	496	850	371	339,404
12 "	20,971	36,947	44,364	340	837	346	331,120
13 "	19,932	35,547	44,030	221	744	307	323,523
14 "	19,898	34,466	43,554	284	686	226	318,686
15 "	19,372	33,413	41,044	297	564	210	305,369
16 "	17,848	30,132	37,055	226	447	139	276,018
17 "	12,357	21,191	24,417	211	285	84	205,734
18 "	3,330	6,147	7,130	157	103	38	89,653
19 ^a "	812	1,522	1,600	68	33	7	24,769
20 "	274	450	342	18	29	—	5,630
21 years and over	199	598	317	10	4	27	3,253
Total	248,647	437,002	549,190	4,806	11,209 ^a	4,569	5,821,954 ^a

¹Age as at June 30, 1971 for public schools (except Ontario and Alberta) and federal schools; as at Sept. 30, 1971 for private schools, and public schools in Ontario and Alberta.

^aData not available by age for public and private schools.

^aIncludes pupils over 19 years of age in federal schools.

^aIncludes 200 pupils, age not available, for federal schools.

^aIncludes 85 pupils, age not available, for federal schools.

^aIncludes 167 pupils, age not available.

^aIncludes enrolment in public and private schools for Quebec and 452 other pupils for which age is not available.

7.5 Private school enrolment, by province, 1967-68 to 1972-73

Year	Nfld.	PEI	NS	NB	Que.	Ont.	Man.	Sask.	Alta.	BC	Canada
1967-68	230	140	3,255	468	68,909	42,986	9,708	1,987	5,614	24,160	157,457
1968-69	364	136	2,748	381	61,263	41,604	8,958	1,917	5,231	23,172	145,774
1969-70	553	70	2,125	353	62,500 ^e	43,007	8,178	1,854	5,342	22,359	146,341
1970-71	722	29	1,649	463	61,326 ^e	44,116	8,284	1,552	5,688	21,319	145,148
1971-72	746	—	1,405	398	64,766 ^e	43,949	7,438	1,710	5,439	21,777	147,628
1972-73	843	—	1,394	636	67,940 ^e	44,826	7,224	1,268	5,403	22,061	151,595

7.6 Full-time enrolment at the post-secondary non-university level, by type of institution and by province, 1971-72 and 1972-73

Province	Teachers' colleges		Hospital and regional schools of nursing		Community colleges and related institutions		Universities		Total	
	1971-72	1972-73	1971-72	1972-73	1971-72	1972-73	1971-72	1972-73	1971-72	1972-73
Newfoundland	—	—	700	671	848	820	—	—	1,548	1,491
Prince Edward Island	—	—	193	177	391	313	—	1	584	491
Nova Scotia	797	548	998	814	934	985	67	—	2,796	2,347
New Brunswick	707	412	1,007	761	792	668	—	—	2,506	1,841
Quebec	736	213	785	—	36,147	44,700	55 ^e	8,417 ^a	37,723	53,330
Ontario	3,057	2,082	9,307	8,072	37,981	42,367	7,482	1,519 ^a	57,827	54,040
Manitoba	—	—	1,153	983	2,655	2,268	193	60	4,001	3,311
Saskatchewan	—	—	335	172	2,026	2,241	84	295	2,445	2,708

7.6 Full-time enrolment at the post-secondary non-university level, by type of institution and by province, 1971-72 and 1972-73 (concluded)

Province	Teachers' colleges		Hospital and regional schools of nursing		Community colleges and related institutions		Universities		Total	
	1971-72	1972-73	1971-72	1972-73	1971-72	1972-73	1971-72	1972-73	1971-72	1972-73
Alberta	—	—	1,782 ^r	1,636	8,577	9,347	—	220	10,359 ^r	11,203
British Columbia	—	—	1,331	1,174	5,707	6,064	—	455	7,038	7,693
Canada	5,297	3,255	17,591 ^r	14,460	96,058	109,773 ^a	7,881	10,967	126,827 ^r	138,455

^rIncludes 8,388 students from English CEGEPs who are enrolled at some universities.

^aRyerson Polytechnical Institute reported 6,914 students at non-university level in 1971-72. For 1972-73 these students have been distributed at undergraduate level.

^rIncludes diploma students only.

7.7 Total and female full-time enrolment at the post-secondary non-university level¹, by field of specialization², 1967-68 to 1971-72

Field of specialization and sex		1967-68	1968-69	1969-70	1970-71	1971-72
Applied arts	T	5,414	6,351	9,859	9,590	11,749
	F	2,770	3,239	5,055	4,462	..
Business and commercial	T	9,302	14,762	19,722	27,004	29,341
	F	2,120	3,691	5,207	8,258	..
Nursing (RN diploma)	T	24,323	25,100	25,795	26,545	26,034 ^a
	F	24,036	24,785	25,432	26,110	..
Teacher training	T	23,517	23,625	15,046	10,848	5,297
	F	15,576	15,849	11,190	7,921	..
Technologies						
Aeronautical	T	323	428	628	737	718
	F	—	5	9	10	..
Architectural	T	1,028	1,240	884	1,187	1,093
	F	19	18	17	56	..
Automotive and diesel	T	897	588	465	94	278
	F	—	—	—	—	..
Chemical	T	1,549	1,981	2,556	2,846	6,905
	F	138	297	671	954	..
Civil	T	2,366	3,165	3,405	3,206	2,614
	F	26	44	63	44	..
Electrical and electronics	T	6,256	7,314	7,874	7,852	7,907
	F	19	43	65	80	..
Food	T	252	368	582	123	535
	F	170	224	355	49	..
Marine	T	229	127	263	95	196
	F	—	—	2	—	..
Mechanical	T	3,746	3,640	3,602	4,780	6,256
	F	29	15	27	50	..
Medical and dental	T	1,757	3,256	3,932	3,608	3,885
	F	1,518	2,605	2,765	3,089	..
Natural resources	T	2,315	2,695	3,973	4,808	4,481
	F	42	81	307	108	..
Social welfare and recreation	T	984	2,318	3,526	5,289	6,169
	F	382	1,390	2,039	3,452	..
Miscellaneous	T	7,431	5,043	4,695	10,200	5,488
	F	2,667	755	914	4,010	..
Total	T	91,689	102,001	106,807	118,812	118,946
	F	49,512	53,041	54,118	58,653	..

¹Excludes CEGEP academic enrolment.

²Does not include students in university diploma courses.

^aIncludes hospital and regional schools of nursing and community college enrolments.

7.8 Enrolment in university-transfer programs of community colleges and related institutions, by province, 1968-69 to 1972-73

Province	1968-69	1969-70	1970-71	1971-72	1972-73
Nova Scotia	158	193	194	164	130
Quebec ¹	23,277	31,359	40,658	46,542	55,314 ¹
Saskatchewan	51	54	46	67	48
Alberta	1,709	1,927	2,309	2,268	2,347
British Columbia	2,675	3,679	5,394	5,785	5,380
Canada	27,870	37,212	48,601	54,826	63,219

¹CEGEP academic enrolment.

7.9 Full-time enrolment in universities and colleges¹, by province, 1968-69 to 1972-73

Province	1968-69	1969-70	1970-71	1971-72	1972-73
Newfoundland	4,782	5,157	6,378	7,077	7,309
Prince Edward Island	1,555	1,566	1,755	1,771	1,581
Nova Scotia	11,747	13,956	15,626	16,291	16,096
New Brunswick	8,961	9,608	10,580	10,952	10,229
Quebec	64,401	66,830	62,113	62,819	65,428
Ontario	92,932	108,825	121,115	134,422	135,024
Manitoba	15,099	16,597	16,941	17,351	17,023
Saskatchewan	13,833	14,919	14,814	14,801	13,380
Alberta	23,213	26,624	29,524	28,769	27,764
British Columbia	29,320	30,064	30,623	28,776	27,583
Canada	265,843	294,146	309,469	323,029	321,417

¹Excludes community colleges.**7.10 Degrees granted^b by Canadian universities and colleges, by type and by sex, 1966-67 to 1971-72**

Year	Bachelors and first professional degrees			Masters			Earned doctorates		
	M	F	T	M	F	T	M	F	T
1966-67	28,178	14,538	42,716	4,202	1,054	5,256	717	63	780
1967-68	31,849	17,207	49,056	4,594	1,148	5,742	908	98	1,006
1968-69	34,305	20,013	54,318	5,487	1,557	7,044	1,021	87	1,108
1969-70	37,273	23,180	60,453	6,640	1,821	8,461	1,247	128	1,375
1970-71	41,596	25,604	67,200	7,516	2,122	9,638	1,474	151	1,625
1971-72	43,982	28,582	72,564	7,715	2,543	10,258	1,564	160	1,724

7.11 Bachelor and first professional degrees awarded by Canadian universities and colleges, by field of study and by sex, 1971-72

Field of study	Male		Female		Total
Agriculture	564		53		617
Architecture	222		27		249
Arts	15,808		13,122		28,930
Arts or sciences	511		265		776
Commerce and business administration (incl. secretarial studies)	3,338		318		3,656
Dentistry	383		15		398
Education (incl. physical and health education and recreation)	7,317		8,702		16,019
Engineering and applied sciences	4,147		53		4,200
Environmental studies	305		45		350
Fine and applied arts (incl. music, interior and industrial design)	382		565		947
Forestry	87		3		90
Household science (incl. dietetics and nutrition)	23		577		600
Journalism	28		26		54
Law	1,892		260		2,152
Library science	49		103		152
Medicine	1,282		268		1,550
Nursing	32		1,124		1,156
Optometry	41		7		48
Pharmacy	229		232		461
Rehabilitation medicine (incl. occupational therapy and physiotherapy)	30		211		241
Religious studies (incl. theology and religious education)	475		125		600
Science	6,576		2,212		8,788
Social work	123		226		349
Veterinary medicine	121		17		138
Other	17		26		43
Total	43,982		28,582		72,564

7.12 Graduate-level degrees and diplomas awarded by Canadian universities, by field of study and by sex, 1971-72^p

Field of study	Diplomas			Masters			Doctorates			Total		
	M	F	T	M	F	T	M	F	T	M	F	T
Fine and applied arts	4	6	10	40	57	97	3	3	6	47	66	113
Humanities and related	13	14	27	1,368	894	2,262	162	40	202	1,543	948	2,491
Social sciences and related	265	53	318	2,613	746	3,359	197	34	231	3,075	833	3,908
Education	237	94	331	1,245	476	1,721	97	12	109	1,579	582	2,161
Agriculture and biological sciences	27	1	28	415	129	544	216	24	240	658	154	812
Engineering and applied sciences	35	1	36	998	28	1,026	260	1	261	1,293	30	1,323
Health professions	160	56	216	179	113	292	128	23	151	467	192	659
Mathematical and physical sciences	6	1	7	857	100	957	501	23	524	1,364	124	1,488
Total	747	226	973	7,715	2,543	10,258	1,564	160	1,724	10,026	2,929	12,955

7.13 Students¹ in continuing education courses, by level of institution and by province, 1971-72

Item	Province or territory					
	New-found-land	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario
Part-time credit program	14,564	4,799	15,697	12,851	208,330	238,320
School boards/departments of education	3,433	984	3,149	1,980	100,227	30,801
Provincial correspondence schools	—	43	753	553	2,787	49,901
Colleges	4,628	1,323	4,099	1,266	16,433	46,541
Universities	6,503	2,449	7,696	9,052	88,883	111,077
Formal non-credit courses	7,428	3,193	13,270	7,566	90,372	176,047
School boards/departments of education	2,977	2,536	10,053	5,702	65,955	105,034
Provincial correspondence schools	—	—	—	—	—	—
Colleges	2,506	332	138	—	3,960	34,883
Universities	1,945	325	3,079	1,864	20,457	36,130
Total	21,992	7,992	28,967	20,417	298,702	414,367
	Province or territory					
	Mani-toba	Saskat-chewan	Alberta	British Colum-bia	Yukon Territory and Northwest Territories	Canada
Part-time credit program	23,420	21,081	36,691	55,682	1,087	632,522
School boards/departments of education	2,145	1,972	2,915	8,666	9	156,281
Provincial correspondence schools	1,282	2,737	6,347	6,943	—	71,346
Colleges	3,545	4,652	12,225	29,045	1,078	124,835
Universities	16,448	11,720	15,204	11,028	—	280,060
Formal non-credit courses	17,922	14,370	44,964	132,635	738	508,505
School boards/departments of education	8,119	5,891	16,467	94,974	738	318,446
Provincial correspondence schools	—	—	—	2,922	—	2,922
Colleges	4,990	1,186	11,498	10,289	—	69,782
Universities	4,813	7,293	16,999	24,450	—	117,355
Total	41,342	35,451	81,655	188,317	1,825	1,141,027

¹Number of individuals enrolled in school board evening credit courses and non-credit courses (all institutions) are estimates based on 1971-72 course registrations.

7.14 Participation in continuing education courses per 1,000 population, 1971-72

Item	Province or territory					
	New-found-land	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario
Out-of-school population 15 years of age and over as at June 1, 1972 ¹	No. 289,578	66,526	478,086	375,618	3,749,511	4,883,463
Part-time credit program	50.3	72.1	32.9	34.2	55.6	48.8
School boards/departments of education ²	11.8	14.8	6.6	5.2	26.7	6.3
Provincial correspondence schools	—	0.6	1.6	1.5	0.8	10.2
Colleges	16.0	19.9	8.6	3.4	4.4	9.5
Universities	22.5	36.8	16.1	24.1	23.7	22.8
Formal non-credit courses ²	25.7	48.0	27.7	20.2	24.1	36.1
School boards/departments of education	10.3	38.1	21.0	15.2	17.6	21.5
Provincial correspondence schools	—	—	—	—	—	—
Colleges	8.7	5.0	0.3	—	1.1	7.2
Universities	6.7	4.9	6.4	5.0	5.4	7.4
Total participation	76.0	120.1	60.6	54.5	79.7	84.9
	Province or territory					
	Mani-toba	Saskat-chewan	Alberta	British Colum-bia	Yukon Territory and Northwest Territories	Canada
Out-of-school population 15 years of age and over as at June 1, 1972 ¹	No. 617,336	557,972	984,526	1,437,794	29,654	13,470,064
Part-time credit program	38.0	37.8	37.2	38.7	36.6	47.0
School boards/departments of education ²	3.5	3.6	3.0	6.0	0.3	11.6
Provincial correspondence schools	2.1	4.9	6.4	4.8	—	5.3
Colleges	5.7	8.3	12.4	20.2	36.3	9.3
Universities	26.7	21.0	15.4	7.7	—	20.8
Formal non-credit courses ²	29.0	25.7	45.7	92.3	24.9	37.7
School boards/departments of education	13.1	10.5	16.7	66.1	24.9	23.6
Provincial correspondence schools	—	—	—	2.0	—	0.2
Colleges	8.1	2.1	11.7	7.2	—	5.2
Universities	7.8	13.1	17.3	17.0	—	8.7
Total participation	67.0	63.5	82.9	131.0	61.5	84.7

¹Figures are estimates derived from June 1, 1971 Census data.

²See footnote 1, Table 7.13.

7.15 Registrations in non-credit courses, by course type and by region, 1971-72

Course type	Canada			Quebec			Ontario			Prairie region			British Columbia			Yukon Territory and Northwest Territories		
	Regis- trations No.	%		Regis- trations No.	%		Regis- trations No.	%		Regis- trations No.	%		Regis- trations No.	%		Regis- trations No.	%	
Professional development	168,986	22.8		12,054	8.5		58,332	23.1		37,676	34.9		48,738	25.3		89	8.0	
General interest	533,567	72.1		119,128	84.3		183,396	72.8		63,463	58.8		134,331	69.9		1,020	92.0	
Association diploma	37,554	5.1		10,120	7.2		10,269	4.1		6,796	6.3		9,241	4.8		—	—	
Total	740,107	100.0		141,302	100.0		251,997	100.0		107,935	100.0		192,310	100.0		1,109	100.0	
Professional development	168,986	100.0		12,054	100.0		58,332	100.0		37,676	100.0		48,738	100.0		89	100.0	
Agriculture and related	11,016	6.5		1,300	10.8		3,627	6.2		4,379	11.6		964	2.0		—	—	
Business and management	60,350	35.7		3,933	32.5		23,087	39.6		16,031	42.6		14,292	29.3		42	47.2	
Education	9,556	5.7		344	2.8		5,562	9.5		1,584	4.2		1,886	3.9		—	—	
Engineering and applied sciences	4,496	2.7		542	4.5		684	1.2		1,165	3.1		1,279	2.6		—	—	
Fine and applied arts	5,300	3.1		339	2.8		3,842	6.6		1,060	2.8		41	0.1		—	—	
Health sciences	19,669	11.6		2,077	17.2		5,839	10.0		1,550	4.1		6,194	12.7		—	—	
Humanities and related	1,127	0.7		167	1.4		259	0.4		500	1.3		83	0.2		—	—	
Mathematics and physical sciences	3,757	2.2		145	1.2		1,065	1.8		1,550	4.1		229	0.5		—	—	
Social sciences and related	6,468	3.8		356	2.9		1,777	3.1		1,700	4.5		2,221	4.5		—	—	
Other trades/Technical	47,247	28.0		3,448	28.5		12,590	21.6		8,157	21.7		21,549	44.2		47	52.8	
General interest	533,567	100.0		119,128	100.0		183,396	100.0		63,463	100.0		134,331	100.0		1,020	100.0	
Fine arts and crafts	104,626	19.6		16,363	13.7		34,567	18.9		15,157	23.9		30,268	22.5		204	20.0	
Home arts	133,162	25.0		53,183	44.6		37,701	20.6		11,253	17.7		18,372	13.7		289	28.3	
Home handyman	41,954	7.9		16,575	13.9		16,630	9.1		3,859	6.1		2,608	2.0		54	5.3	
Modern languages and literature	14,933	2.8		1,849	1.6		8,506	4.6		2,822	4.4		707	0.5		28	2.7	
Second language	19,551	3.7		2,735	2.3		7,723	4.2		1,627	2.6		6,031	4.5		119	11.7	
Language and citizenship	24,892	4.7		371	0.3		17,845	9.7		1,995	3.1		4,681	3.5		—	—	
Public affairs	18,696	3.5		2,638	2.2		2,961	1.6		3,043	4.8		9,321	6.9		20	2.0	
Health and family life	29,995	5.6		10,430	8.8		12,420	6.8		881	1.4		5,111	3.8		50	4.9	
Social sciences and related	10,632	2.0		864	0.7		2,243	1.2		3,731	5.9		3,211	2.4		—	—	
Personal development and leadership	26,978	5.0		5,998	4.7		6,952	3.8		3,666	5.8		9,840	7.3		104	10.2	
Recreational skills	53,634	10.0		1,323	1.1		19,151	10.4		8,650	13.6		22,029	16.4		92	9.0	
Driver education and related	24,003	4.5		668	0.5		10,636	5.8		1,626	2.6		11,060	8.2		13	1.3	
Other	30,511	5.7		7,570	6.4		6,061	3.3		5,153	8.3		11,092	8.3		47	4.6	
Association diploma	37,554	100.0		10,120	100.0		10,269	100.0		6,796	100.0		9,241	100.0		—	—	
Accounting	18,525	49.3		5,184	51.2		6,908	67.3		2,583	38.0		3,000	39.0		—	—	
Banking	7,143	19.0		486	4.8		1,167	11.3		581	8.6		494	5.3		—	—	
Education	1,142	3.0		590	5.8		1,120	11.2		24	0.4		43	0.5		—	—	
Management	4,975	13.3		463	4.6		1,126	11.0		1,903	28.0		1,342	14.5		—	—	
Public administration	1,187	3.2		210	2.1		1,278	12.5		678	10.0		21	0.2		—	—	
Insurance/Real estate	5,099	13.6		101	1.0		534	5.2		810	11.9		3,403	36.8		—	—	
Other	3,771	10.0		3,172	31.3		136	1.3		241	3.5		179	1.9		—	—	

7.16 Part-time university and college¹ enrolment, by province, 1971-72 and 1972-73

Year and province	Undergraduate degrees, diplomas and certifi- cates, auditors, special students, etc.	Graduate degrees, diplomas and certificates, qualifying year	Non-university level diplomas or certificates	Total
1971-72				
Newfoundland	3,439	269	—	3,708
Prince Edward Island	1,197	—	—	1,197
Nova Scotia	2,990	352	—	3,342
New Brunswick	4,575	93	—	4,668
Quebec	50,153	5,901	5,263	61,317
Ontario	48,992	8,205	255	57,452
Manitoba	7,686	872	—	8,558
Saskatchewan	2,767	483	428	3,678
Alberta	6,115	1,433	—	7,548
British Columbia	3,498	421	—	3,919
Canada	131,412	18,029	5,946	155,387
1972-73				
Newfoundland	3,244	234	—	3,478
Prince Edward Island	919	—	—	919
Nova Scotia	3,172	390	—	3,562
New Brunswick	4,679	154	—	4,833
Quebec	39,972	6,997	5,262	52,231
Ontario	51,816	9,208	811	61,835
Manitoba	7,544	851	88	8,483
Saskatchewan	3,352	584	573	4,509
Alberta	6,328	1,638	208	8,174
British Columbia	3,966	425	376	4,767
Canada	124,992	20,481	7,318	152,791

¹Excludes transfer colleges.

7.17 Summary statistics of teachers and principals in public elementary and secondary schools, by sex and by province, 1971-72

Province	Teachers and principals		Median salaries ¹		Median experience		University graduates	
	M	F	M \$	F \$	M yr	F yr	M %	F %
Teaching elementary grades ²								
Newfoundland	1,435	3,456	7,099	5,535	5.6	5.7	44.1	21.1
Prince Edward Island	176	947	6,969	5,655	5.8	10.5	54.5	15.2
Nova Scotia	1,245	5,256	8,379	6,891	5.7	10.6	59.8	26.0
New Brunswick	993	4,187	7,752	6,069	5.9	9.7	63.1	21.0
Quebec	..	..	..	..	..	..	..	..
Ontario	..	..	..	..	..	..	..	..
Manitoba	1,930	5,421	8,914	6,780	7.3	5.8	53.7	20.1
Saskatchewan	2,106	5,159	9,004	7,620	7.6	9.0	57.9	14.3
Alberta	3,946	9,049	10,476	8,311	7.6	8.9	78.0	40.3
British Columbia	3,661	8,772	10,516	8,672	8.8	6.8	66.3	31.7
Teaching secondary grades ¹								
Newfoundland	1,328	429	8,190	7,745	5.7	5.8	71.0	67.4
Prince Edward Island	301	215	8,108	7,088	5.4	6.9	78.1	53.0
Nova Scotia	1,991	1,377	9,359	8,418	6.2	7.8	76.2	63.7
New Brunswick	1,671	1,105	8,196	7,430	6.0	7.0	75.2	60.4
Quebec	..	..	..	..	..	..	..	..
Ontario	..	..	..	..	..	..	..	..
Manitoba	2,856	1,524	10,983	9,067	7.1	5.4	86.3	72.4
Saskatchewan	2,470	981	11,457	8,650	9.3	7.5	82.9	63.0
Alberta	4,884	2,642	11,115	9,618	7.3	6.4	87.4	75.1
British Columbia	6,620	3,059	11,499	9,910	8.8	6.8	84.5	79.9

¹Salary data exclude figures for Roman Catholic schools.

²A teacher who teaches both elementary and secondary grades is classified by level according to type of school. If he teaches in a junior high school or a junior-senior high school, or if he teaches in more than one school, he is classified as a "secondary" teacher; otherwise, he is classified as an "elementary" teacher.

7.18 Median salaries¹ of full-time teachers in universities and colleges, by rank, 1967-68 to 1971-72 (dollars)

Year	All ranks	Deans	Professors	Associate professors	Assistant professors	Lecturers and instructors
1967-68	11,403	20,714	17,081	12,998	10,228	7,990
1968-69	12,224	22,555	18,516	14,058	11,030	8,649
1969-70	13,265	24,067	19,870	15,012	11,837	9,441
1970-71	14,248	25,950	21,504	16,057	12,701	10,002
1971-72	15,084	27,033	22,579	16,848	13,321	10,521

¹Based on data provided by reporting institutions accounting for 80% to 99% of the enrolment.

7.19 Expenditures on education and percentage distribution, by source of funds, 1966-71

Year	Total \$'000,000	Government			Fees %	Other sources %
		Federal ¹ %	Provincial %	Municipal %		
1966	4,155.2	13.0	47.8	27.8	5.3	6.1
1967	5,025.5	12.5	51.6	26.1	4.5	5.3
1968	5,777.1	11.3	54.4	25.6	4.4	4.3
1969	6,554.8	11.2	54.5	25.6	4.1	4.6
1970 ^r	7,565.4	11.8	54.9	23.6	3.9	5.8
1971P	8,241.7	11.9	59.6	21.3	3.3	3.9

¹Starting with 1967, funds transferred to the provinces for the purpose of post-secondary education are classified as provincial expenditures.

7.20 Expenditures on education, by level of study, 1966-71 (million dollars)

Year	Total	Elementary and secondary	Post-secondary		Total	Vocational training
			Non- university	University ¹		
1966	4,155.2	2,790.9	125.0	991.6	1,116.6	247.7
1967	5,025.4	3,230.0	200.1	1,243.4	1,443.5	351.9
1968	5,777.1	3,775.1	251.2	1,360.0	1,611.2	390.8
1969	6,554.8	4,262.8	272.2	1,583.0	1,855.2	436.8
1970	7,565.4 ^r	4,900.4 ^r	373.5	1,829.6 ^r	2,203.1 ^r	461.9
1971P	8,241.7	5,472.9	413.9	1,889.4	2,303.3	465.5

¹Expenditures for university transfer students are included under "university" for all years up to and including 1969-70.

7.21 Facilities for the study of the arts in Canada, academic year 1970-71

Course	University			Community College and CEGEP		Independent	
	Under-graduate	Masters	Doc-torate	Transfer diploma	Voca-tional diploma	Diploma	Non-diploma
Advertising and commercial art	—	—	—	—	7	1	—
Fine art	20	3	2	17	10	3	3
Crafts ¹	—	—	—	—	8	2	3
Creative writing	—	—	—	1	—	1	—
Dance	1	—	—	—	—	7	1
Design ²	6	—	—	—	16	1	1
Graphic arts	—	—	—	—	14	1	1
Music	32	9	6	10	4	3	—
Photography and film	3	—	—	6	6	1	1
Theatre	14	5	1	2	5	2	3

¹Includes pottery, ceramics, batik, jewellery and metal arts.

²Includes furniture, interior and fashion design.

7.22 Number of museums, art galleries and related institutions in Canada, 1970

Type of institution	Nfld.	PEI	NS	NB	Que.	Ont.	Man.	Sask.	Alta.	BC	YT and NWT	Canada
General museum ¹	—	2	9	6	11	53	7	11	20	29	2	150
Art museum or gallery	1	—	3	4	13	22	3	6	8	7	—	67
History museum	2	2	16	5	12	52	7	9	14	17	—	136
Natural science museum	—	—	—	—	3	6	4	5	3	3	—	24
Science and technology museum	—	—	—	—	1	3	—	1	—	1	—	6
Archives	1	1	6	3	8	19	1	2	3	5	—	49
Zoo or wildlife refuge	—	—	—	—	4	8	1	3	1	2	—	19
Aquarium	—	—	—	—	2	—	—	—	—	1	—	3
Botanical garden, arboretum or conservatory	—	—	—	—	3	4	—	—	1	3	—	11
Planetarium	—	—	—	—	—	1	1	—	2	1	—	5
Observatory	—	—	—	—	1	3	—	1	—	2	—	7
Historic building or restoration	3	4	11	6	6	36	4	7	3	5	2	87
Other ²	6	4	6	2	23	50	8	12	11	22	—	144
Total	13	13	51	26	87	257	36	57	66	98	4	708

¹A museum is classified as "General" if the response indicated more than one category of collection, e.g., archaeology, entomology, ethnology.

²Institutions which did not completely fit into the specified types are classified as "Other". This classification also includes pioneer villages, and some complexes where one questionnaire was used to respond for two or more components of a complex, e.g., planetarium, art museum.

7.23 Summary statistics of public libraries, 1972, with totals for 1970 and 1971

Province or territory	Population '000	Libraries reporting	Bookstock ¹	Circulation	Total operating expenditure \$'000	Full-time positions filled
Newfoundland	532	3	506,466	1,750,821	1,122	80
Prince Edward Island	113	1	138,092	323,363	303	29
Nova Scotia	794	11	868,241	2,976,851	2,129	193
New Brunswick	642	4	443,442	1,932,510	1,040	115
Quebec	6,050	111	4,510,073	10,496,084	7,653	530
Ontario	7,824	370	14,565,181	47,806,563	44,997	2,800 ²
Manitoba	992	25	1,052,057	3,765,707	2,278	160
Saskatchewan	916	11	1,364,398	4,224,748	3,311	259
Alberta	1,655	142	2,495,419	7,349,572	5,330	394
British Columbia	2,247	66	3,376,110	14,793,395	9,279	596
Yukon Territory	19	1	81,746	137,373	430	17
Northwest Territories	36	1	49,636	100,143	168	8
Canada						
1972	21,820	746	29,450,861	95,657,130	78,040	5,181
1971	21,568	716	27,241,907	97,336,707	70,617	5,261
1970	21,377	732	25,509,456	96,324,476	62,162	4,867

¹Books and other materials catalogued as books; does not include periodical and newspaper titles.

²1972 includes all full-time positions with the exception of those in libraries in population centres under 10,000 where data are only available for professional positions.

7.24 Libraries in universities and colleges, academic year 1971-72

Province	Institutions reporting ¹	Full-time enrolment ²	Volumes of books, periodicals and pamphlets	Full-time staff	Total operating expenditures \$
UNIVERSITIES ³	114	322,574	26,729,323	6,949	89,290,319
Newfoundland	1	7,077	387,283	98	1,914,030
Prince Edward Island	1	1,771	146,692	29	455,737
Nova Scotia	10	16,277	1,313,912	281	3,674,112
New Brunswick	7	10,542	885,627	198	2,547,979
Quebec	19	62,819	5,466,882	1,474	16,211,042
Ontario	43	134,391	11,757,024	3,031	40,503,437
Manitoba	8	17,351	1,177,645	286	3,380,663
Saskatchewan	10	14,801	1,039,781	236	3,302,910
Alberta	7	28,769	1,938,168	614	8,254,365
British Columbia	8	28,776	2,616,309	702	9,046,044
COLLEGES ⁴	154	150,918	4,397,292	1,052	12,080,074
Newfoundland	2	848	22,110	5	84,526
Prince Edward Island	1	391	4,000	1	14,866
Nova Scotia	5	2,177	121,911	24	259,161
New Brunswick	4	1,348	39,763	7	72,576
Quebec	68	79,214	2,824,681	539	5,166,453
Ontario	42	40,825	697,028	235	3,130,102
Manitoba	3	2,555	44,590	25	204,944
Saskatchewan	3	1,289	44,070	8	84,038
Alberta	12	10,779	266,359	104	1,260,176
British Columbia	14	11,492	332,780	104	1,803,232

¹Associated, affiliated and federated colleges of universities and campuses of colleges which are separately administered are counted individually.

²Excludes part-time enrolment in full-time equivalents as well as enrolments in vocational and extension programs.

³Universities are defined as degree-granting institutions including affiliated, associated and federated colleges if these offer four-year academic programs leading to degrees which are granted by the parent university.

⁴Colleges are defined as post-secondary, non-degree-granting institutions offering technical and university transfer programs of one to four years duration. In addition, these may offer other levels of courses of less than one year in vocational and extension programs.

Sources

7.1 - 7.24 Education, Science and Culture Division, Institutions and Public Finance Statistics Branch, Statistics Canada.

Chapter 8

Labour

8.1 The government in relation to labour

8.1.1 Canada Department of Labour

Established in 1900 under the Conciliation Act which involved the federal government in preventing and settling labour disputes, the Canada Department of Labour was formed to investigate important industrial questions and to collect, analyze and publish statistical and other information related to Canadian labour conditions. It also administered the Fair Wages Policy, adopted in the same year to protect people employed on federal government contracts and on projects supported by public funds. The Department's work focused on two areas, industrial relations and manpower supply, until January 1, 1966 when all manpower activities were transferred to the Department of Manpower and Immigration.

The industrial relations legislation now administered by the Canada Department of Labour applies to employers, employees and trade unions within federal jurisdiction. The Department is responsible for conciliation procedures in industrial disputes, investigating complaints of unfair labour practices, refusals to bargain and violations of legislation, processing trade union applications for certification and decertification and conducting representation votes. It determines wage rates and hours of work as far as federal government contracts for construction or supplies are concerned, and promotes improved industrial relations through joint union-management consultation and by preventive mediation through industry specialists. The Department is also responsible for administering assistance granted under the Automotive Manufacturing Assistance Regulations and the Adjustment Assistance Benefits Program for displaced workers in the textile and clothing, and the footwear and tanning industries.

Much of the legislation regulating employment practices, labour standards, safety and industrial regulations was integrated in the Canada Labour Code which came into force on July 15, 1971. It is discussed later in this Chapter.

The Department's over-all objective is to achieve economic and social progress by establishing a climate of good industrial relations promoted through three main programs: the Industrial Relations program encompassing the Conciliation and Arbitration Branch, the Employee Representation Branch, the Fair Employment Practices Branch and the Union-Management Services Branch; the Employment Standards program covering the Labour Standards Branch, the Accident Prevention and Compensation Branch and the Women's Bureau; the Research and Development program comprising the Economics and Research Branch, the International Labour Affairs Branch, the Legislative Research Branch and Library Services.

The Department maintains records of labour legislation in the provinces and in other countries and provides liaison between the International Labour Organization and the federal and provincial governments. As part of a broad publication program it publishes the monthly *Labour Gazette*.

8.1.2 Department of Manpower and Immigration

The Department of Manpower and Immigration recruits and develops manpower resources in line with the needs of the economy. The prime goal of Canada's manpower policy is to contribute to the country's economic and social goals by making the best use of its work force.

The Department's domestic field activities are carried out in five regions through some 400 Canada Manpower Centres and 95 Immigration Centres. Regional directors-general are responsible for both manpower and immigration activities in the field, reporting to headquarters.

Broad objectives of the Department in Canada are: to provide an effective employment service for both workers and employers through strategically located Canada Manpower Centres; to help workers attain their full potential through counselling or referral to skill-development and upgrading programs; to assist employers in recruiting skilled workers, and facilitate long-range manpower planning by providing up-to-date occupational and labour market information; to help labour and management adapt to technological change by assist-

ing them to co-operate in manpower adjustment programs; to provide reception, settlement and job placement services for immigrants; and to process documents for international travellers and enforce the Immigration Act and Regulations within Canada, providing facilities to handle applications from Canadians wishing to sponsor or nominate relatives.

In the fiscal year ended March 31, 1973, Canada Manpower Centres assisted more than 1.0 million persons, excluding casual workers, in finding continuing employment, and referred an additional 2.4 million clients to full- or part-time courses under the Canada Manpower Training Program. In the same period 18,000 clients were referred to federal-provincial rehabilitation programs (which became the responsibility of the Department of National Health and Welfare on April 1, 1973). In addition, 71,674 workers and trainees were granted moving and transportation assistance under the Canada Manpower Mobility Program.

The Manpower Division's four branches administer employment programs and services through Canada Manpower Centres. The Employer Services Branch deals with the demand side of the labour market, providing guidelines in the development and utilization of employment services for employers and specialized information on industrial needs. The Branch directs the operations of the Canada Manpower Consultative Service which assists industries undergoing manpower dislocations as a result of technological change. It also administers the Canada Manpower Mobility Program to facilitate the movement of workers to areas of job opportunity. The Manpower Utilization Branch is concerned with the supply side of the labour market. It formulates policies and guidelines for employment counselling and aptitude and achievement tests used by Canada Manpower Centre counsellors. The Branch also administers programs to assist new members of the labour force and students seeking summer employment. The Manpower Training Branch directs programs to help improve the qualifications of under-employed, unemployed or disadvantaged adult workers. Training courses are purchased from provincial or private schools or through contracts with employers and participants receive wage reimbursements or training allowances. The Special Programs Branch co-ordinates the application of all manpower programs and services to the needs of disadvantaged unemployed persons in the labour force.

In 1973-74 the federal government continued the Special Employment Plan introduced in October 1971 to alleviate seasonal unemployment while upgrading the skills of workers and contributing to community improvement and economic growth. The Department of Manpower and Immigration is responsible for two elements of the Plan: the Local Initiatives Program which in 1972-73 produced some 88,799 jobs through 5,817 community projects conceived, organized and managed by private citizens and funded by the Department; and the Canada Manpower Training-on-the-Job Program through which more than 36,645 trainees were hired by employers.

The Manpower Delivery System provides three levels of service to people looking for employment. The first level consists of a Job Information Centre where job vacancies are displayed enabling clients to decide themselves which jobs they think they can fill. In addition, an Employment Opportunity Library at the Centre contains information about the Department's programs and the services of other departments and agencies. The second level of service is directed at people who are basically employable but who could benefit from counselling, from courses provided through the Canada Manpower Training Program or from assistance in finding jobs in other areas and in moving which is available through the Canada Manpower Mobility Program. The third level is designed for clients who require concentrated counselling. Counsellors may use outside agencies for special assistance in helping people in this group to become employable. They are then referred to a job or may make selections from a "job bank".

The Immigration Division, under the Assistant Deputy Minister, Immigration, is responsible for the recruitment, processing, movement and initial reception of people coming to Canada who will be able to establish themselves economically, culturally and socially. They include people whose skills are required by the Canadian economy, relatives of Canadian residents, and refugees and non-immigrants entering on a short-term basis.

As of January 1, 1973, all non-immigrants entering Canada to take temporary work must have an employment visa. Visitors are not permitted to come to Canada to look for work. This regulation protects the Canadian labour force against the unwarranted use of short-term foreign labour.

To obtain an employment visa, the person concerned must have pre-arranged employment and certification by a Canada Manpower Centre that no Canadian citizen or landed immigrant is available for that job. Preliminary arrangements should be made at an Immigration office in the person's own country.

Other immigration regulations are discussed in Chapter 3.

The Strategic Planning and Research Division, formerly the Program Development Service, collects and analyzes information on national, regional and local labour market conditions in order to give direction to the Department's policies and programs. In addition, it carries out research programs in support of its own and other divisions' activities and develops career and occupational counselling and training materials.

These responsibilities are assigned to four branches and groups: Research Projects Group, Economic Analysis and Forecasts Branch, Strategic Planning and Evaluation Group, and Occupational and Training Analysis and Development Branch.

Administration Division. Headed by an Assistant Deputy Minister, the Administration Division comprises units responsible for providing professional and technical support to line management: information service, personnel, financial management, data processing, organization and methods, security and general administrative services.

8.1.3 Federal and provincial labour legislation

8.1.3.1 Jurisdictions

The Canada Labour Code (RSC 1970, c.L-1) applies only to federal undertakings and any other operations that Parliament declares are for the general advantage of Canada or two or more of its provinces. The Code consolidated previous legislation regulating employment practices, labour standards, etc., in the federal jurisdiction.

Because it imposes conditions on the rights of the employer and employee to enter into a contract of employment, labour legislation is, generally speaking, law in relation to civil rights and provincial legislatures are authorized to make laws in relation both to local works and to property and civil rights. Power to enact labour legislation has become, therefore, largely a provincial prerogative, under which a large body of legislation has been enacted affecting working hours, minimum wages, the physical conditions of workplaces, apprenticeship and training, wage payment and wage collection, labour-management relations and workmen's compensation.

8.1.3.2 Federal labour legislation

Industrial relations. The Conciliation and Arbitration Branch of the Department of Labour administers the provisions of Part V of the Canada Labour Code (Industrial Relations) relating to the application of formal conciliation procedures (i.e. the appointment of conciliation officers, conciliation commissioners and the establishment of conciliation boards). The Branch also provides mediation services to parties throughout the direct bargaining stage and in post-conciliation negotiations, including strike and lockout situations. If a dispute of difference between any employer and employees exists in an industry, the Minister of Labour may refer the matter to an Industrial Inquiry Commission for investigation. On behalf of the Minister, the Branch administers the Code's provisions relating to certain types of complaints which must receive Ministerial consent before they can be referred to the Canada Labour Relations Board. Other violations of the Code referring Ministerial consent to prosecution are also handled by the Branch.

When requested, the Minister may appoint single arbitrators or arbitration board chairmen if parties or nominees are unable to agree on the selection.

The Canada Labour Relations Board administers provisions contained in Part V of the Canada Labour Code governing the acquisition and termination of bargaining rights; successor rights and obligations; the disposition of applications relating to technological change, and to illegal strikes and lockouts; complaints of unfair practices; and granting of access to employer's premises.

Fair employment practices. Part I of the Canada Labour Code (Fair Employment Practices) prohibits discrimination in employment on the grounds of race, colour, religion or national origin in any federal work, undertaking or business. It covers discrimination by employers, by trade unions in regard to membership or employment, by employers who use employment

agencies that discriminate, and in the use of any form of application for employment, advertisement, written or oral inquiry that expresses directly or indirectly any limitation, specification or preference as to race, colour, religion or national origin.

Labour standards. Part III of the Canada Labour Code (Labour Standards) provides minimum standards of employment applicable to employers and employees in industries that are under the legislative authority of the Parliament of Canada.

The Code sets both standard and maximum hours of work. The overtime rate (one and a half times the regular rate) must be paid after eight hours in a day and 40 hours in a week, to a maximum of 48 hours in a week. Hours may be averaged when an employee's schedule of hours varies from day to day or week to week because of the nature of the work. If the Minister of Labour is satisfied that exceptional circumstances justify the additional hours, he may issue a permit allowing an employee to exceed the maximum hours. The Governor in Council may make regulations varying the standard and maximum hours for classes of employees in any specified industrial establishment where the Code standards would be unduly prejudicial to the interest of the employees or seriously detrimental to the operation of the establishment. An inquiry must be held before such regulations may be made.

The minimum wage is \$2.20 an hour for all persons 17 years of age or over and \$1.95 an hour for persons under 17 years of age as of April 1, 1974. The Governor in Council may issue orders from time to time increasing the minimum rate.

Employees are entitled to a two-week vacation with pay each year and a holiday with pay on each of the eight general holidays, or substitutes for them.

An employer must give advance notice to the Minister of Labour and the union, with a copy to the Department of Manpower and Immigration, when dismissing 50 or more employees during a four-week period. The length of notice varies according to the number of employees being dismissed: 50-100 employees, eight weeks; 101-300 employees, 12 weeks; more than 300 employees, 16 weeks. In addition, the employer and the trade union must provide the Department of Manpower and Immigration with whatever information it requests to assist the employees. The requirement to give notice may be waived for an industrial establishment or a specified class of employees by an order of the Minister of Labour, subject to any terms or conditions that he may determine.

Under the Code's provisions respecting individual dismissals, every employee with three months service (except a manager, superintendent or member of a profession) is entitled to two weeks notice of termination of his employment. In lieu of such notice, he is entitled to two weeks wages at his regular rate for his regular hours of work. In addition, an employee who has completed five consecutive years of continuous employment is entitled to severance pay based on two days wages at his regular rate for his regular hours of work, for each year of employment up to a maximum of 40 days wages. However, the employer is not required to give severance pay to an employee who is dismissed for just cause or to a person who, on termination of employment, is entitled to a retirement pension.

The maternity protection provisions grant 17 weeks of maternity leave — 11 weeks before and six weeks after childbirth — and ensure job security to women absent from work because of pregnancy. To be eligible for maternity leave, a woman must have been continuously employed by her employer for 12 months. The Code provides for voluntary prenatal leave up to 11 weeks before the anticipated date of delivery, and this period extends to the actual date of confinement.

The Code prohibits an employer from paying men and women employees at different rates if they work in the same establishment at equally demanding jobs under the same or similar conditions. It also prohibits an employer from dismissing, laying off or suspending an employee solely because of garnishment.

Fair wages policy. Wages and hours on government construction contracts are regulated by the Fair Wages and Hours of Labour Act and Regulations. The rates are never less than the minimum hourly rate prescribed by Part III (Labour Standards) of the Canada Labour Code. Wages and hours of work on contracts for equipment and supplies are regulated by Order in Council.

Safety of employees. Part IV of the Canada Labour Code (Safety of Employees) incorporates the Canada Labour (Safety) Code of 1968, which was the first general safety legislation passed by the Parliament of Canada. To ensure safe working conditions for all employees in industries

and undertakings under federal jurisdiction, Part IV provides for all the elements of a complete industrial safety program; obliges employers and employees to perform their duties in a safe manner and authorizes the making of regulations for dealing with occupational safety problems; complements other federal laws and provincial legislation; authorizes advisory committees and special task forces to assist in developing the program under continuous consultation among federal and provincial government departments, industry and organized labour; and provides for research into causes and prevention of accidents and for an extended safety education program. Employees of the Public Service of Canada, although not covered by Part IV of the Canada Labour Code, are given equivalent protection under standards, issued by Treasury Board, complementary to the safety and health regulations of Part IV of the Code. Regional safety officers and federally authorized provincial inspectors enforce the safety regulations.

As of January 31, 1974, regulations were in force governing coal mine safety, elevating devices, first aid, machine-guarding, noise control, hand tools, fire safety, temporary work structures, confined spaces, lighting, boilers and pressure vessels, building safety, dangerous substances, electrical safety, materials handling, protective clothing and equipment, sanitation, hours of service in the motor transport industry, and accident investigation and reporting.

8.1.3.3 Provincial labour legislation

Industrial relations. All provinces have legislation similar in principle to Part V of the Canada Labour Code, designed to establish harmonious relations between employers and employees and to facilitate the settlement of industrial disputes. These laws guarantee freedom of association and the right to organize, establish machinery (labour relations boards or other administrative systems) for the certification of a trade union as the exclusive bargaining agent of an appropriate unit of employees, and require an employer to bargain with the certified trade union representing his employees.

Alberta, Ontario, New Brunswick, Nova Scotia, Prince Edward Island and Newfoundland have special provisions for accrediting employer organizations in the construction industry; in British Columbia accreditation provisions are not limited to the construction industry. Most laws require the parties to comply with the conciliation or mediation procedures laid down before a strike or lockout may legally take place. Every collective agreement must provide machinery for settling disputes arising out of the agreement and prohibit strikes and lockouts while an agreement is in effect. All of them prohibit defined unfair labour practices and prescribe penalties. In some provinces, certain groups such as public servants, policemen, firemen, teachers and hospital workers are governed by special legislation.

Hours of work. In Alberta and British Columbia hours are limited to eight a day and 44 a week, and in Ontario to eight a day and 48 a week. One and a half times the regular rate is to be paid after eight and 44 hours in Alberta and after eight and 40 in British Columbia. The Ontario Act requires, with some exceptions, that one and a half times the regular rate be paid for work done, under permit, beyond the 48-hour limit. The Manitoba and Saskatchewan Acts do not limit daily and weekly hours but require the payment of one and a half times the regular rate if work is continued after eight and 44 hours in Manitoba and eight and 40 in Saskatchewan. In Nova Scotia and Prince Edward Island one and a half times the regular rate must be paid after 48 hours in a week, and in Quebec after 45 hours. One and a half times the regular rate is to be paid after standard hours of eight a day and 44 a week in the Northwest Territories and eight a day and 48 a week in the Yukon Territory. Some exceptions are provided for in all Acts. No general standard of hours of work are in effect in New Brunswick or Newfoundland.

Minimum wages. All jurisdictions have enacted minimum wage legislation to ensure adequate living standards for workers. These laws vest authority in a minimum-wage-fixing board or the Lieutenant Governor in Council to establish minimum wages for employees. In most provinces minimum wage orders now cover practically all employment. Domestic service in private homes is excluded in all provinces except Newfoundland and Prince Edward Island. Farm labour is also excluded except in Newfoundland, but in several provinces people employed in farm-related occupations are covered. Minimum wage rates apply in Manitoba to those employed in selling horticultural or market garden products grown by another person, in Saskatchewan to those in egg hatcheries, greenhouses, nurseries and brush-clearing opera-

tions, and in Alberta and Prince Edward Island to farm workers employed in commercial undertakings. Minimum wage rates set by the orders apply throughout the province and are the same for both sexes. Most jurisdictions also set special minimum rates for young workers.

As of January 1, 1974, the provincial and territorial minimum hourly wage rates for experienced adult workers were as follows: Newfoundland \$1.80, Prince Edward Island and Nova Scotia \$1.65, New Brunswick \$1.75, Quebec \$1.85, Ontario \$2.00, Manitoba \$1.90, Saskatchewan \$2.00, Alberta \$1.90, British Columbia \$2.25 and Northwest Territories and Yukon Territory \$2.00. The federal rate was \$1.90 but was to rise to \$2.20 on April 1, 1974.

Regulation of wages and hours in certain industries. Apart from general hours-of-work laws, other statutes regulate working hours in some industries. Industrial standards legislation is in effect in Newfoundland, Prince Edward Island, Nova Scotia, New Brunswick, Ontario, Saskatchewan and Alberta. These laws provide that a schedule of wage rates and hours of work agreed on by a representative group of employees and employers in an industry or trade may, with government approval, be given statutory effect by Order in Council. Such wage rates and hours then become the minimum terms of employment for the entire industry or trade in the area. An advisory committee, usually equally representative of employers and employees, is established to assist in enforcing a schedule. This type of legislation is used fairly extensively in the building trades, the clothing industries, barbering and a few other industries. In Newfoundland, Nova Scotia and New Brunswick schedules have been issued only for certain construction trades in some areas. In Ontario schedules for the garment trades and the fur industry apply throughout the province and a substantial number of schedules apply to various construction trades and to barbering in specified areas.

Under the Quebec Collective Agreement Decrees Act, certain terms of a collective agreement, including those dealing with hours and wages, may be made binding on all employers and employees in the industry concerned in a defined area, provided the parties to the agreement represent a sufficient proportion of the industry. The standards made binding under this procedure are contained in a decree, which has the force of law. Approximately 85 decrees applying to the garment trades, barbering and hairdressing, commercial establishments, garage and service stations, and other industries and services are in effect; a number of them apply throughout the province. Working conditions in the construction industry are governed by decrees under a separate Act — the Construction Industry Labour Relations Act, 1968.

The Construction Industry Wages Act in Manitoba, which applies to both private and public construction work, provides for setting minimum wage rates and maximum hours of work at regular rates for employees in the construction industry, on the recommendation of a board equally representative of employers and employees, with a member of the public as chairman. Under this Act annual schedules set the regular work week and hourly wage rates for various classifications of workers in the heavy construction industry, in the Greater Winnipeg building construction industry, and in rural building construction.

Annual vacations and public holidays. All jurisdictions have annual vacations legislation applicable to most industries. The general standard is two weeks. In Ontario workers are entitled to a one-week vacation after the first year of employment and two weeks after the second and each subsequent year, in Manitoba three weeks after five years of service, and in Saskatchewan three weeks after four years and four weeks after 15 years (with a gradual reduction to result in four weeks after 10 years as of July 1, 1978). Several jurisdictions, including the federal, Alberta, British Columbia, Manitoba, Nova Scotia, Ontario, Saskatchewan, the Yukon Territory and the Northwest Territories have enacted legislation of general application dealing with public holidays. The number of holidays varies from five to nine and the provisions for payment also vary.

Vacation pay equals 4% of annual earnings in Newfoundland, Nova Scotia, Prince Edward Island, New Brunswick, the Yukon Territory, the Northwest Territories, Quebec and Ontario (2% in the first year); in Manitoba and Alberta, regular pay; and in Saskatchewan 1/26th of annual earnings in the first four years and 3/52nds of annual earnings during and after the fifth year. The federal rate is 4%.

Termination of employment. As in the federal jurisdiction, eight provinces have legislation requiring an employer to give notice to the individual worker whose employment is to be terminated. In Saskatchewan and Prince Edward Island an employer must give an individual employee one week's written notice of termination; in Manitoba and Newfoundland, one

regular pay period. In Alberta, Nova Scotia and Ontario the length of notice varies with the period of employment. In Ontario and Nova Scotia: three months to two years, one week; two to five years, two weeks; five to 10 years, four weeks; 10 years or more, eight weeks. In Alberta: three months but less than two years, seven days; two years or more, 14 days. Quebec requires the employer of a domestic, a servant, journeyman or labourer to give one week's notice of termination if the employee is hired by the week, two weeks notice if hired by the month and a month's notice if hired by the year. Alberta, Manitoba, Newfoundland, Nova Scotia, Prince Edward Island and Quebec require an employee to give similar notice before quitting his job.

Four provinces require an employer to give advance notice of a planned termination of employment or layoff of a group of employees. The Manitoba and Ontario group notice requirements apply when an employer plans to terminate the employment of 50 or more persons within four weeks or less. The length of notice is related to the number of workers involved. In Manitoba the requirements are: 50-100 employees, 8 weeks; 101-300, 12 weeks; over 300, 16 weeks. In Ontario: 50-199, 8 weeks; 200-499, 12 weeks; 500 or more, 16 weeks. The Nova Scotia and Quebec group notice requirements apply when an employer contemplates the dismissal of 10 or more employees within a period of two months. Again, the length of notice required varies with the number of workers involved: 10-100, two months; 101-300, three months; 301 and over, four months.

Maternity protection. Several provinces have legislation to ensure the health and job security of women workers before and after childbirth. The Ontario, British Columbia and New Brunswick Acts provide for six weeks leave before childbirth and six weeks after; the Manitoba and Nova Scotia Acts allow 11 weeks before and six after. In Saskatchewan, the Act provides for 12 weeks before and six weeks after. Except in New Brunswick and British Columbia, the postnatal leave is compulsory, unless a medical doctor authorizes an earlier return to work. In all jurisdictions, the right to maternity leave is supplemented by a guarantee that an employee will not lose her employment because of absence on maternity leave.

Anti-discrimination laws. All jurisdictions have adopted fair employment practices laws forbidding discrimination in hiring and conditions of work and in trade union membership on grounds of race, colour, religion and, depending on the jurisdiction, nationality or national origin. All the Acts, except those of Prince Edward Island and the Yukon Territory forbid discrimination in these areas on the grounds of sex. In Alberta, British Columbia, Ontario, New Brunswick and Newfoundland, discrimination in employment and trade union membership on the grounds of age is also prohibited. With the exception of Quebec, each jurisdiction has provisions in separate equal pay Acts or in human rights or labour standards legislation that forbid discrimination in rates of pay solely on the basis of sex. Quebec does not have equal pay legislation but, as indicated above, forbids discrimination in employment on the basis of sex.

Apprenticeship. All provinces have apprenticeship laws providing for an organized procedure of on-the-job training and school instruction in designated skilled trades, and statutory provision is made in most provinces for issuing qualification certificates, on application, to qualified tradesmen in certain trades. In some provinces legislation is in effect making it mandatory for certain classes of tradesmen to hold a certificate of competency.

Accident prevention. In most provinces factory or industrial safety Acts and workmen's compensation boards regulate conditions of sanitation, heating, lighting and ventilation and prescribe machine-guarding practices to protect the health and safety of workers. Legal standards control the design and operation of mechanical equipment, electrical installation, the use of gas-and oil-burning machinery and radiation-producing equipment such as laser sources, and set qualifications for workers using such equipment. Construction and excavation work are also regulated by specified safety standards.

Workmen's compensation. Provincial workmen's compensation legislation was amended in several provinces in 1973. Effective January 1, 1974, the ceiling on maximum annual earnings on which compensation payments are based was increased from \$7,600 to \$10,000 in Alberta, from \$8,600 to \$9,000 in British Columbia, from \$7,000 to \$9,000 in Newfoundland raising the maximum weekly compensation rate from \$100.97 to \$129.81, from \$7,000 to \$7,500 in New Brunswick raising the weekly rate from \$100.97 to \$108.17, and from \$7,000 to \$9,000 in Nova Scotia.

Provisions governing compensation for disability were amended in four provinces. In Alberta weekly payments for permanent total disability must equal 75% of the worker's average weekly earnings to a maximum of \$10,000 a year. Weekly payments for a period of temporary total disability must equal 75% of the worker's average weekly earnings. In New Brunswick the monthly rate for permanent total disability is \$250 and \$45 a week or earnings, if less, for temporary total disability. Nova Scotia raised its monthly rate for permanent total disability to \$225 a month and \$45 a month for each child under 18 years or to age 21 if education is being continued. Temporary total disability payments must not be less than 75% of the minimum wage fixed by the Minimum Wage Board in Nova Scotia, effective January 1, 1974. Ontario raised its monthly compensation rate for permanent total disability to \$250 a month and \$55 a week or earnings, if less, for temporary total disability.

Several provinces made changes in dependents allowances. Alberta, effective January 1, 1974, increased benefits for a dependent widow, widower or common law spouse if the relationship had existed for five years (or two years if a child had been born to the couple). The minimum Worker's Compensation Board pension for a dependent widow or widower prior to January 1, 1974, was increased to \$225 a month and the dependent child allowance was increased to \$70 a month until the age of 18. The lump sum termination of pension payment was increased to \$2,700 for a dependent widow or widower upon remarriage. Amendments in Ontario, effective July 1, 1973, increased the widow's monthly pension from \$175 to \$250 a month and the children's allowance by \$10 to \$70 a month for each child and to \$80 a month for orphans. The maximum funeral allowance was increased from \$400 to \$500. Changes in New Brunswick, effective June 1, 1973, raised the widow's monthly benefit from \$100 to \$140 a month and the lump sum payment from \$200 to \$300. The monthly benefit for a school child with one parent was increased from \$25 to \$40 and for an orphan attending school from \$50 to \$75. In Prince Edward Island, an amendment brought into force March 16, 1973, increased the amount payable to a widow or invalid widower with one or more children to \$400 from \$200. The allowance to a child with one parent was raised from \$25 to \$30 and to an orphan child from \$35 to \$40. In Nova Scotia, effective January 1, 1974, the lump sum payment to a widow or widower was increased from \$250 to \$500; the monthly payment to a widow or invalid widower for each child under 18 years of age was increased from \$38 to \$45, and for an orphan from \$45 to \$60. The monthly allowance for other dependents was raised from \$60 to \$75 for any one dependent, not to exceed a total of \$100 a month.

A New Brunswick Order in Council issued December 20, 1973, extended workmen's compensation coverage to all employees of provincial school boards. Alberta's new Worker's Compensation Act applies to all businesses and industries except those specifically excluded. Quebec excluded participating athletes from the coverage granted to the employees of various athletic clubs.

Amendments to the legislation in Alberta and British Columbia effective January 1, 1974 provide for the establishment of committees to review compensation claims on behalf of the employer and the worker or dependent.

8.2 The labour force

8.2.1 Labour force (monthly surveys)

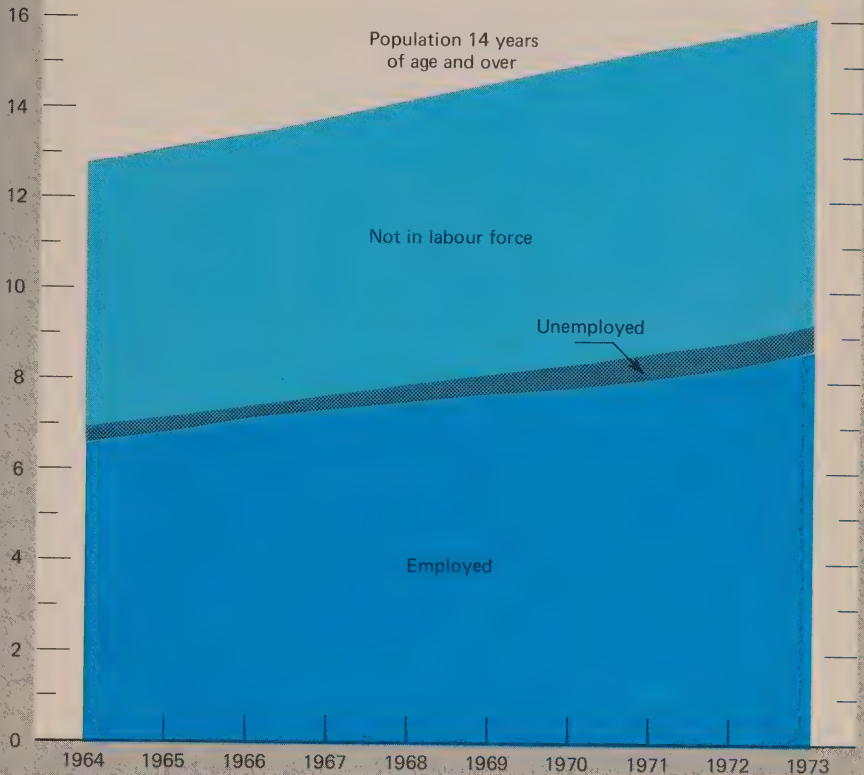
Since 1946 reliable information for analysis of employment in Canada, at the national level and for the five major regions, has been provided through a labour force survey. Between November 1945 and November 1952, quarterly surveys were taken and since then the survey has been carried out on a monthly basis. The sample used in the survey has been designed to represent all persons in the population 14 years of age and over, residing in Canada, with the exception of residents of the Yukon Territory and the Northwest Territories, Indians living on reserves, inmates of institutions and members of the Armed Forces. Interviews are carried out in approximately 30,000 households chosen by area sampling methods across the country. In the survey, people are classified on the basis of their activity during the reference week, i.e. the week prior to the survey interview week.

The civilian labour force is composed of that portion of the civilian non-institutional population 14 years of age and over who, during the reference week, were employed or unemployed.

The employed include all persons who, during the reference week, did any work for pay

**Estimates of the civilian labour force
and its main components, 1964-73**
(figures not adjusted for seasonality)

Millions of persons



or profit; did any work which contributed to the running of a farm or business operated by a related member of the household; or had a job but were not at work because of bad weather, illness, industrial dispute or vacation, or because they were taking time off for other reasons. People who had jobs but did not work during the reference week and who also looked for work are included in the unemployed as people without work and seeking work.

The unemployed are all those who, through the reference week, were without work and seeking work, i.e. did not work during the reference week and were looking for work, or would have been looking for work except that they were temporarily ill, were on indefinite or prolonged lay-off, or believed no suitable work was available in the community; were temporarily laid off for the full week, i.e. were waiting to be called back to a job from which they had been laid off for less than 30 days.

Those not in the labour force include all civilians 14 years of age and over (exclusive of the institutional population) who are not classified as employed or unemployed. This category includes people going to school, keeping house, too old or otherwise unable to work, and voluntarily idle or retired. Housewives, students and others who worked part-time are classified as employed or, if they looked for work, as unemployed.

Because they are based on a sample of households, estimates derived from the labour force survey are subject to sampling error. In the design and processing of the survey, extensive efforts are made to minimize the sampling error; in general, the percentage of error tends

to decrease as the size of the estimate increases. A statistical measure of the sampling error is given in Statistics Canada monthly publication *The labour force* (Catalogue No. 71-001).

As illustrated in the accompanying chart and in Table 8.1, the period 1964-73 was one of rapid expansion as the actual labour force increased by 2.3 million persons or 33.8%. The number of women in the labour force increased by 59.8%, an advance that was greater, both absolutely and relatively, than the increase of 23.5% experienced by men. The total participation rate (the labour force as a percentage of the population 14 years of age and over) continued to increase and reached a level in 1973 of 57.5% compared with 54.1% in 1964.

In the decade under review the male participation rate declined from 1964 to 1971 and increased from 1971 to 1973. In 1973 the rate was 76.8% compared with 78.1% in 1964 (see Table 8.2). While there was a decline in the total male participation rate, there was an increase for men aged 14-24 over the period under review. The rate increased to 61.4% in 1973 from 57.0% in 1964.

The accelerated entry of women into the labour force has more than compensated for the decline in male labour force participation; in 1973 the rate was 38.7% compared with 30.5% in 1964 (see Table 8.2). As the second chart indicates, the participation rate of women increased over the period in all age groups except for those 65 years and over. This increase was the result of changes in the rate of both major age groups. The participation rate for females 14-24 increased from 38.2% in 1964 to 46.4% in 1973 and that for women 25 years and over from 27.8% in 1964 to 35.7% in 1973.

The total number of persons employed in Canada rose by 32.5%, from 6.6 million in 1964 to 8.8 million in 1973 (Table 8.1). This increase was shared by all regions of the country (Table 8.3): employment in the Atlantic region rose by 134,000 (24.7%), in Quebec by 526,000 (28.8%), in Ontario by 893,000 (36.1%), in the Prairie region by 264,000 (22.7%) and in British Columbia by 332,000 (54.9%).

Table 8.4 illustrates the changes over the decade in the distribution of actual employment by industry. The proportion of persons employed in the service-producing industries continued to increase; the numbers in the goods-producing industries indicated a corresponding decline. Transportation, trade, finance and services accounted for 63.3% of total employment in 1973 compared with 56.3% in 1964. Conversely, the goods-producing industries, comprising agriculture, primary industries, manufacturing and construction, dropped from 43.7% of total employment in 1964 to 36.7% in 1973. The most significant changes occurred in services and in agriculture. The share of total employment increased from 26.7% to 32.7% in services and decreased from 9.5% to 5.3% in agriculture.

On the average in 1973, over 87% of the employed were full-time workers (people usually working 35 hours or more a week). As the third chart illustrates, men working full-time represented nearly 62% of total employment while women represented nearly 26%. The number of women in part-time employment represented 8% of total employment. Men working part-time however, accounted for only half as much of total employment.

On an annual average basis, unemployment as a percentage of the labour force ranged between 3.6% in 1966 and 6.4% in 1971; it averaged 5.6% in 1973. On an age/sex basis (see Table 8.2) only men 25 years and over showed a similar rate in 1973 compared to 1964; the other groups showed increases between those two years. Persons not in the labour force averaged 6.8 million in 1973 compared with 5.9 million in 1964, an increase of 16.3%.

8.2.2 Labour force (1971 Census)

At each decennial census of Canada, questions are asked of persons 15 years of age and over relating to their employment status and present work activities. The census questions have the advantage that they can provide far more detailed information on the occupational and industrial structure as well as other characteristics of the labour force than the small monthly surveys in terms of both geographical areas and classifications. A few short summary tabulations from the most recent 1971 Census are presented in Tables 8.5 to 8.11. For more details, reference can be made to the many census reports issued on these and other aspects of Canada's labour force, (see 1971 Census, Statistics Canada Catalogue Nos. 94-701 to 94-789).

Because of differences in coverage, methodology, reference period, etc., data from the census are in some ways not comparable with those collected by the monthly labour force surveys. Of particular importance among these differences are those of coverage and actual questions asked, even though the fundamental concepts are the same. As stated in the preceding

Section, the small labour force survey sample (about 30,000 households) includes persons 14 years and over but excludes the Yukon Territory and Northwest Territories, Indians on reserves, members of the Armed Forces, overseas households and inmates of institutions. The 1971 Census questions were asked of all persons 15 years and over in a 33 1/3% sample of households (about 2 million households) except that inmates of institutions were automatically classified as not in the labour force.

Labour force participation rates. The labour force at the June 1, 1971 Census included all persons 15 years and over who, during the week preceding the enumeration, worked for pay or profit, did unpaid work in a family farm or business, looked for work, were on temporary lay-off, or had jobs from which they were temporarily absent because of illness, vacation, strike, etc. Based on this definition, Tables 8.5 to 8.7 show the numbers and percentages of the male and female population 15 years and over in Canada's labour force. Table 8.5 provides historical comparisons back to 1911, unadjusted for the changes from the "gainful worker" to the "labour force" concept between 1941 and 1951, or in the questions used to measure the labour force in 1961 and 1971. In spite of these elements of non-comparability, however, the broad outlines of changes over the years are not greatly affected. The main feature is the gradual increase in the proportion of women in the labour force from well below 20% in 1911 to almost 40% in 1971.

Regional differences in labour force participation rates revealed by the 1971 Census as shown in Table 8.6 ranged from 85.1% of males and 48.4% of females in the Yukon Territory, to 65.6% of males and 26.2% of females in Newfoundland. For Canada as a whole the 10-year rate of increase was the highest ever recorded for participation of women in the labour force, moving from 29.7% in 1961 to 39.9% in 1971.

Table 8.7 provides summary data on the number and percentage of males and females in the labour force at the 1971 Census by age group, marital status and schooling. For example, the highest proportions of males in the labour force were to be found in the age ranges between 25 and 54 (i.e. over 90% of their total numbers were in the labour force). The highest proportions of females were in the 20-24 age group (62.8% in the labour force), with lower rates for the 25-54 group (44%). On the basis of schooling, a gradual increase occurred in participation rates for both males and females as schooling levels moved higher. Thus, while only 48.1% of males with less than Grade 5 education were in the labour force, the rate for those with university degrees rose to 91.1%. Corresponding rates for females were 18.8% and 65.3%.

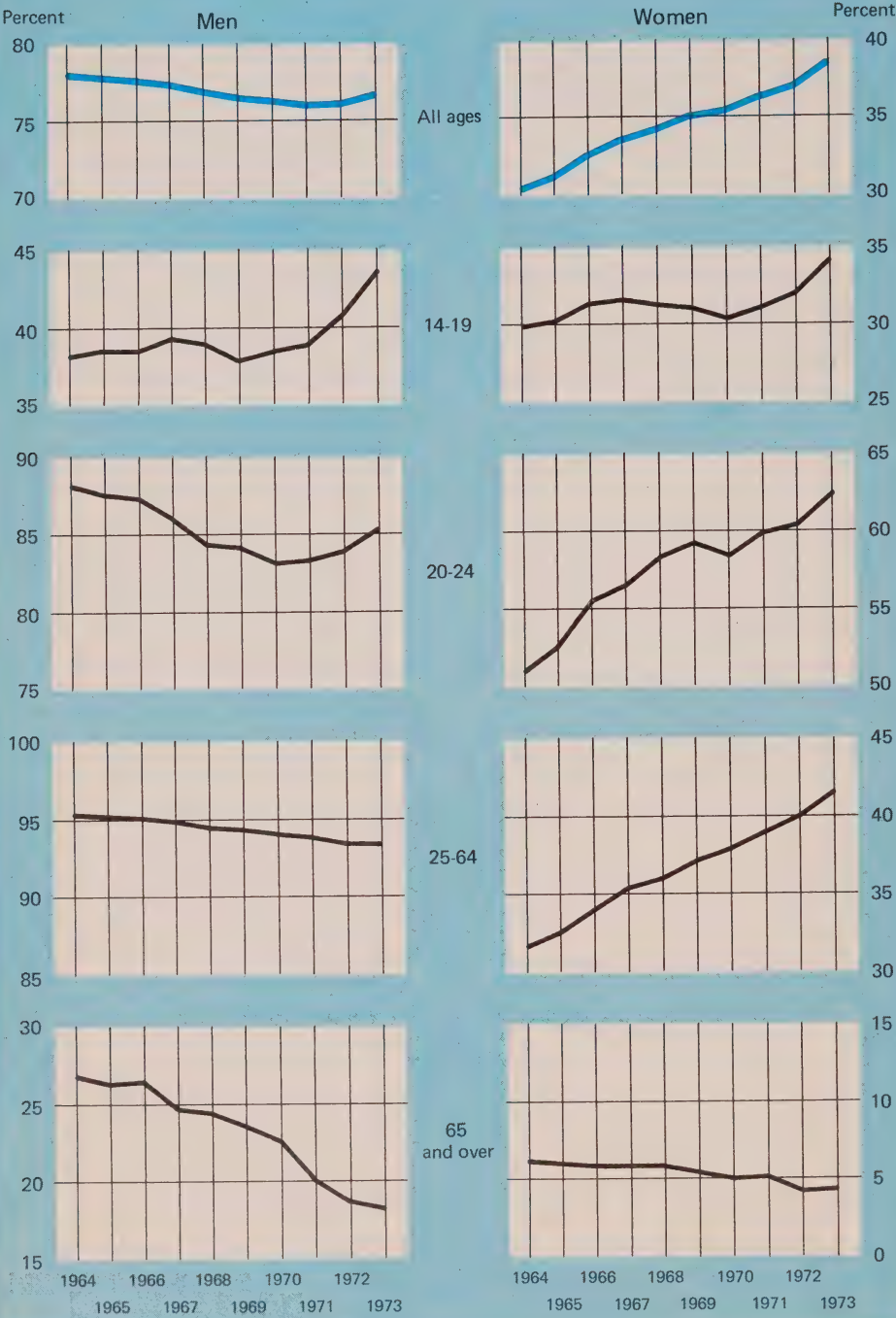
Occupations of the labour force. The occupational structure of the labour force in the 1971 Census was derived from questions which elicited details on the kind of work the person was doing in the week prior to enumeration. If not employed in that week, respondents were asked to report the job of longest duration since January 1, 1970. Those with two or more jobs reported the one at which they worked the most hours. The classification system used was based on the Canadian Classification and Dictionary of Occupations. (See *Occupational classification manual*, Census of Canada, 1971, Volume I, Statistics Canada Catalogue No. 12-536.)

Census reports provide data for over 400 individual occupational classes, but only a summary tabulation of some 20 major groups is presented in Table 8.8. This Table shows that the group consisting of clerical and related occupations was numerically the most important, accounting for 1.4 million or 15.9% of the labour force. The next largest was the service occupations group comprising 969,920 persons or 11.2% of the total. Three groups accounted for almost 30.0% of the male labour force, i.e. sales occupations, service occupations and construction trades. For females, clerical and related occupations alone accounted for close to 32.0% of the total, and service occupations another 15.0%.

Table 8.9 indicates that clerical and related occupations formed the most numerous group in all regions except the Maritime Provinces and in Saskatchewan. Farming occupations represented the largest group in Prince Edward Island (14%) and Saskatchewan (27%), and service occupations in Nova Scotia (16%).

Industries of the labour force. In addition to questions on the kind of work they were doing, respondents in the 1971 Census were asked the name of their employer (or their business name if self-employed) and the kind of business, industry or service carried out by the establishment where they were employed. Statistics Canada's *Standard industrial classification manual* (Catalogue No. 12-501) was used as the basis for classifying the information obtained by the industry inquiry. It should be noted that in this classification system, government

Participation rates in labour force
by age group and sex,
annual averages 1964-73



owned and operated establishments primarily engaged in activities assigned to other industries such as transportation, communications (including post office), liquor sales, health and educational services, were classified to those industries rather than to public administration. The public administration and defence division covers establishments engaged in activities that are basically governmental in character, such as the enactment of legislation, the administration of justice, the collection of revenue and defence.

Table 8.10 shows that community, business and personal services was the largest of the 11 main industry divisions reported at the 1971 Census, accounting for 23.7% of the labour force. Manufacturing had 19.8% and trade 14.7%. Among males, manufacturing accounted for the largest percentage (23.0%), followed by service industries (15.3%). Employment of women was concentrated in the service industries (39.7%), trade (15.7%) and manufacturing (13.7%).

Community, business and personal service industries was the leading industrial group in all provinces except Ontario and Saskatchewan (see Table 8.11). In Ontario the manufacturing group was slightly higher at 24.4% of the labour force, compared to 23.5% in the service industries. Agriculture was the largest industry in Saskatchewan and accounted for 27.1% of the province's labour force, as compared to 22.0% in community, business and personal service industries.

8.3 Employment statistics

8.3.1 Employment, earnings and hours

Monthly records of employment have been collected from larger business establishments since 1921. The surveys currently conducted by Statistics Canada collect data on payrolls, per capita wages and salaries, hours of work, hourly and weekly wages and the number of salaried and wage-earning employees with their respective weekly salaries. Employment indexes are based on 1961 = 100; the data are compiled on the 1960 Standard Industrial Classification.

The survey covers all industries except agriculture, fishing and trapping, education and related services and defence, health and welfare services, religious organizations, public administration, and private households.

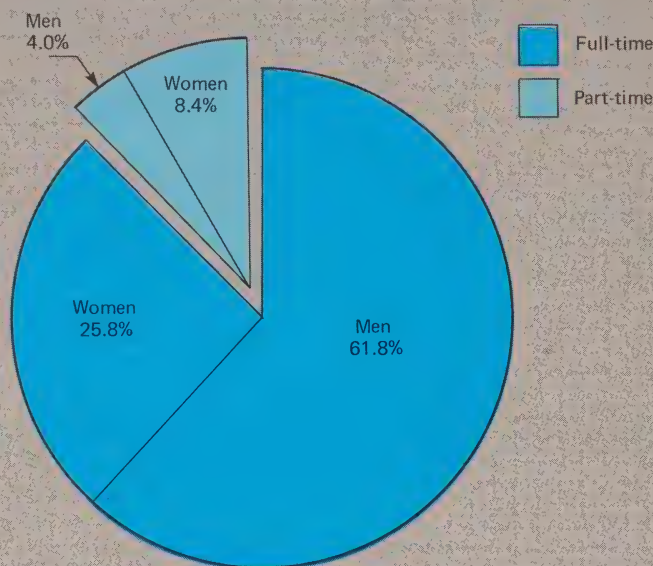
The monthly employment statistics relate to the number of employees drawing pay in the last pay period in the month. Data are requested for all classes of employees except homeworkers and casual employees working less than one day in the pay period. Owners and firm members are also excluded. The respondents report the gross wages and salaries paid in the last pay period in the month, before deductions are made for income tax, unemployment insurance, etc. The reported payrolls represent gross remuneration for services rendered and paid absences in the period specified, including salaries, commissions, piece-work and time-work payments, and such items as shift premiums and regularly paid production, and incentive and cost-of-living bonuses. The statistics on hours relate to the regular and overtime hours worked by those wage-earners for whom records of hours are maintained, and also to hours credited to wage-earners absent on paid leave during the reported period. If the reported period exceeds one week, the payroll and hours data are reduced to weekly equivalents.

Employment. Table 8.12 indicates that, over the 1967-72 period, the industrial composite index of employment for Canada rose by 6.0%. Among the industry divisions showing gains over this period, services led with a 26.1% advance, followed by finance, insurance and real estate (18.0%), trade (16.2%), transportation, communications and other utilities (4.5%), mining (1.3%) and manufacturing (0.4%). Declines occurred in forestry (25.4%) and construction (10.4%) during the same period. Compared with 1971, the industrial composite index for 1972 was up 1.6%.

Annual average index numbers of employment for the years 1968-72 are shown by industrial division and group in Table 8.13, by province and by month for 1972 and 1973 in Table 8.14 and by metropolitan area and by month for 1972 and 1973 in Table 8.15.

Weekly earnings. Average weekly earnings have increased substantially in the years for which current payroll statistics have been collected, rising from \$23.44 in 1939 to \$102.83 in 1967 and \$149.22 in 1972. The upward movement gained momentum beginning in 1946 and average annual increases for the 1946-52 period were more than double those for the 1939-45 period. After 1952 the rate of increase, in percentage terms, fell somewhat, particularly during

Full-time and part-time employment by sex, 1973



the 1959-62 period. In the recent period, gains have been 8.5% in 1971 and 8.4% in 1972. Annual index numbers of employment and average weekly earnings for 1970-72 are presented by industry, province and urban area in Table 8.16. Table 8.17 shows annual average weekly earnings by industrial division for the years 1968-72 and monthly averages for 1972 and 1973.

Hours and earnings of hourly rated wage-earners. The monthly survey of employment and payrolls covers statistics of hours of work and paid absence of those wage-earners for whom records of hours are maintained, together with the corresponding totals of gross wages paid; these wage-earners are mainly hourly rated production workers. Information on hours is frequently not kept by employers for ancillary workers nor, in many industries and establishments, for any wage-earners. Salaried employees are excluded by definition from the series. As a result of these exclusions, data are available for fewer industries and workers than are covered in the employment and average weekly earnings statistics.

During the period 1967-72 average weekly hours declined while average hourly earnings rose substantially. For the most part, upward wage-rate revisions in all industries were responsible for the increases. Technological changes, which in many cases involve the employment of more highly skilled workers at the expense of those in the lower-paid occupations, also contributed to the advance of average hourly earnings. As indicated in Table 8.18 from 1967 to 1972 average hourly earnings rose by 65.1% in construction, by 52.8% in mining and by 47.5% in manufacturing. During the same period, average weekly hours declined by 3.8% in mining, 2.9% in construction and 0.7% in manufacturing. Comparing 1972 to 1971 average hourly earnings increased by 8.4% in construction, by 7.9% in manufacturing and 7.4% in mining; weekly hours dropped 0.3% in mining and increased by 0.8% in manufacturing and by 2.3% in construction. Table 8.19 presents average weekly hours and hourly earnings in specified industries and selected urban areas for 1970-72.

8.3.2 Employment, earnings and hours in accommodation, food and recreational services

In August 1972 Statistics Canada conducted a survey of employment, earnings and hours of work of male and female employees in the accommodation, food and recreational services component of community business and personal services industry division. Coverage of respondents included a census of the larger establishments i.e. with 20 or more employees and a 20% sample of establishments with fewer than 20 employees. The reference period for establishments operating year-round or summer only was the payweek ended August 19, 1972 and for those establishments operating only in the winter, the payweek ended February 12, 1972. Employment in the major groups, accommodation and food services and amusement and recreational services, by occupational group, type and sex, is presented in Table 8.20. Average weekly earnings data, with the same breakdowns, are given in Table 8.21. There were 321,919 employees in accommodation and food services earning an average of \$75.27 in the reference week. Full-time workers accounted for 72.9%. Among the four occupational groups, the proportion of full-time employees ranged from 70.8% in the "others" group to 92.9% in the managerial and administrative group. Women were in the majority except in the managerial and administrative group where they constituted only 27.4% of the total. In amusement and recreational services, part-time and casual employees had a more significant share (44.0%) in the total employment of 79,617. Men made up 64.8% of this group and occupied 80.8% of the jobs in the managerial and administrative group and 73.5% in the "others" group. In the remaining two occupational groups, women were in the majority. Average weekly earnings were \$86.38; \$108.03 for full-time employees and \$58.69 for part-time and casual employees.

More detailed information on provinces, metropolitan areas of Montreal, Toronto, Winnipeg and Vancouver and separate data for large and small establishments are available in the report *Accommodation, food and recreational services — employment, earnings and hours 1972*, (Statistics Canada Catalogue No. 72-602).

8.3.3 Estimates of labour income

Labour income, as shown in Table 8.22, is defined as the compensation paid to employees for services rendered comprising wages and salaries and supplementary labour income. It includes all such payments made to residents of Canada (Canadians employed by the federal government abroad are considered to be residents of Canada) except those made to the Armed Forces. Remuneration to the latter fits the definition of labour income but is excluded here as it is treated as a separate item in the national income accounts.

Wages and salaries include directors' fees, bonuses, commissions, taxable allowances and benefits. The gross remuneration concept has been adopted and wages and salaries are measured before deductions for income tax, unemployment insurance, pension funds, etc. Supplementary labour income, which is defined as payments made by employers for the future benefit of employees, is composed of employers' contributions to employee welfare and pension funds including the Canada and Quebec Pension Plans, to workmen's compensation funds, and to unemployment insurance.

Estimates of labour income based on the 1948 Standard Industrial Classification (SIC) have been published for 1926-69; those based on the 1960 SIC were published in 1969 for the period 1951-68 and then projected to the end of 1971. The entire series 1951-71 has been revised, carried back to 1947 and projected to 1973.

8.3.4 Wage rates, hours and working conditions

Statistics on occupational wage rates by industry and locality, with standard weekly hours of labour, are compiled by the Canada Department of Labour and published in the annual report *Wage rates, salaries and hours of labour*. The statistics are based on an annual survey covering some 38,000 establishments in most industries and apply to the last normal pay period preceding October 1. Average wage rates (excluding overtime) of time-workers and average straight-time earnings of piece-workers and other incentive workers for selected occupations are shown separately in the report but are combined to calculate the industry index numbers shown in Table 8.23. The indexes measure changes in wage rates for non-office employees below the rank of foreman. They do not, however, provide a basis for comparing the level of wages in one industry with that in another. The construction wage index rose from 223.7 in 1971 to 239.9 in 1972, that of mining from 169.9 to 190.1, services from 178.0 to 191.7 and

local government from 200.2 to 217.2. Information on concepts and methods of developing these statistics is given in the annual report.

Table 8.24 presents average wage and salary data for 12 Canadian cities on October 1, 1972. Hourly and weekly wage rates are listed for 23 occupations in the construction and manufacturing industries; salaries are specified for men and for women engaged in several office occupations.

Table 8.25 gives summary data on working conditions of plant and office employees in manufacturing industries and in all industries for the years 1970-72. The percentages in this table denote the proportions that plant or office employees of establishments reporting specific items bear to the total number of all such employees in all establishments replying to the survey; they are not necessarily the proportions of employees actually covered by the various items. Further details and additional information are given in the annual report *Working conditions in Canadian industry*, compiled and published by the Canada Department of Labour and based on a survey at October 1 each year of 38,000 reporting units.

8.4 Pension plans

According to a survey carried out by Statistics Canada in 1970, the number of pension plans in Canada increased by nearly 80% from 1960 to 1970. In 1960, 9,000 plans covered 1.8 million persons and by 1970, 16,000 plans covered 2.8 million. With coverage at this level, nearly 40% of paid workers in Canada participated in a pension plan.

Pension plans were in operation in virtually all industrial sectors, but the degree of coverage varied widely from industry to industry. The most comprehensive coverage was in public administration and defence, where almost all of the 761,000 employees of all government levels, the Armed Forces and the RCMP participated in a plan. Two out of three paid workers in mining and over 40% in manufacturing were covered. In transportation and communication, with some of the oldest and largest plans in the country such as those in the railway, telephone and trucking companies, almost half of the paid workers (337,800 workers) had post-retirement protection. Of the employees working in finance, insurance and real estate about 45% were covered; approximately one in four workers in community, business and personal services — which includes hospitals, religious and welfare organizations and professional agencies, etc. — participated in occupational pension programs. Construction, with 107,400 plan members, had 23% of the workers covered; and trade, both retail and wholesale, with 142,500 participants, provided coverage for 13% of workers in the industry.

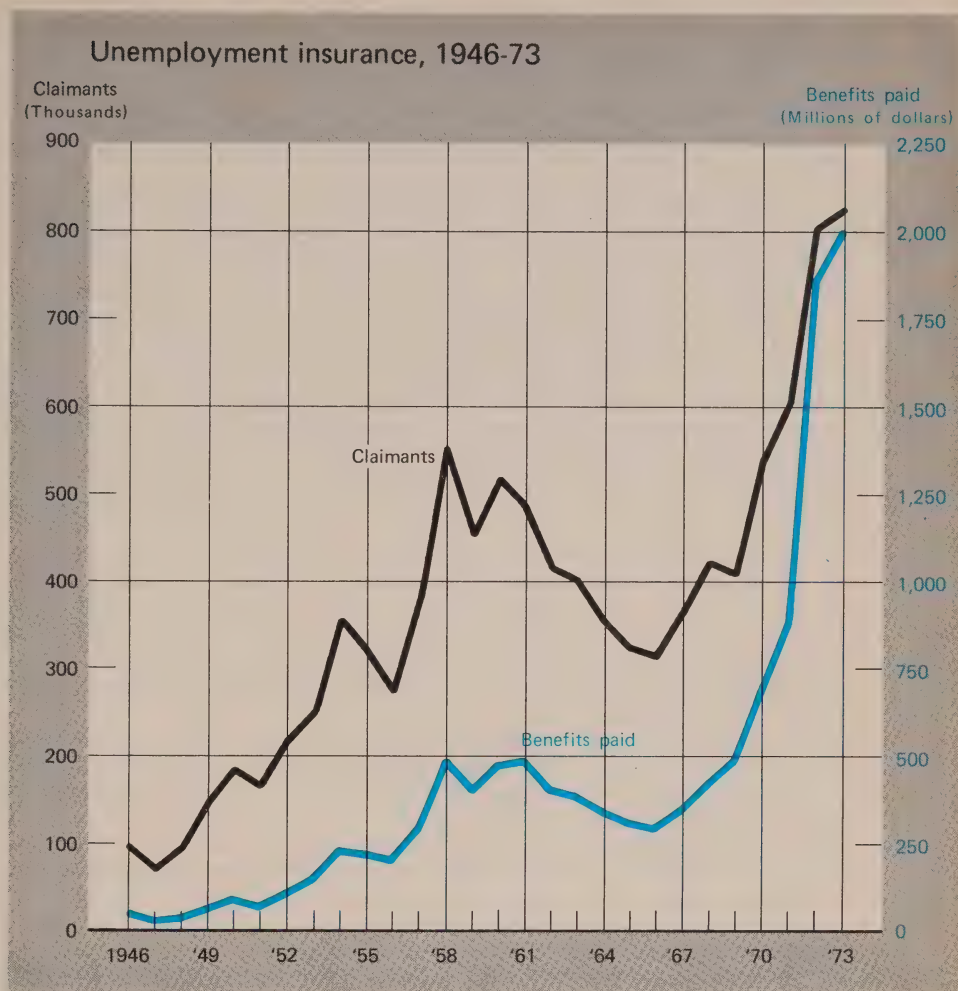
Of the more than 16,000 pension plans in Canada at the beginning of 1970, 11,000 — nearly 70% — were funded by insurance companies, but these accounted for less than 15% of the members or 398,700 out of 2.8 million. Plans with the largest coverage were those designed for government employees; employee contributions are paid into government consolidated revenue funds which are not held in the form of cash or invested securities. Although only 19 in number, these plans applied to a total of 607,800 public servants including those covered by the federal superannuation plan, the Armed Forces, the RCMP and public servants in five provinces.

Aside from these public service plans, the larger plans tended to use either personal or corporate trustees as funding agencies. Although only one quarter of all occupational plans were trustee, they covered more than 60% of the members — some 1.7 million out of the total of 2.8 million persons.

Total contributions paid by and on behalf of the 2.8 million members in 1970 amounted to over \$1,700 million with more than \$1,000 million paid into trustee funds. With an annual cash inflow of this magnitude, trustee pension funds have become one of the largest single pools of money in the country, growing at a rate of 10% to 12% annually, with the book value of assets accumulated by these funds reaching a record total of \$14,050 million by the end of 1972. Because the growth of these funds is so rapid and the total accumulated so large, they are surveyed annually by Statistics Canada; the results are published in *Trusteed pension plans, financial statistics* (Catalogue No. 74-201). A summary tabulation of the key financial data related to these funds is presented in Table 8.26.

The Canada and Quebec Pension Plans are discussed in Chapter 6.

Federal government annuities. Since 1908 the federal government has sold annuities and industrial pension plans under the Government Annuities Act. Decreased need for this type of



service has resulted in the program's reduction. No salesmen have been employed since 1967 but annuities are still available under the Act to those who ask for them. They are now administered by the Unemployment Insurance Commission.

8.5 Unemployment insurance

Unemployment insurance has been part of Canada's social and economic life since the Unemployment Insurance Act was passed in 1940. Since that time various amendments have brought new categories of workers into the plan and contributions and benefit rates have been raised periodically to meet changing economic conditions. However, until recently, the basic structure of the plan remained unaltered.

In 1968, when Parliament approved upward revisions of both contributions and benefit rates and broadened the scope of coverage, the Unemployment Insurance Commission was instructed to investigate the program and to recommend appropriate changes in philosophy and structure. The Unemployment Insurance Act, 1971, effective June 27, 1971, was the result of extensive study; its basic objectives were to provide assistance to cope with interrupted earnings resulting from unemployment, including unemployment from illness, and to co-operate with other agencies engaged in social development.

The 1971 Act extended coverage to all regular members of the labour force (effective January 2, 1972) for whom there exists an employer-employee relationship. The only non-in-

insurable employees are those who earn less than 20% of the maximum weekly insurable earnings or less than 20 times the provincial hourly minimum wage, whichever is less. Coverage, contributions and benefit entitlement cease at age 70.

Employers and employees absorb the cost of initial benefits and administration; the employer rate is 1.4 times the employee rate. The government share is confined to the cost of extended benefits and the excess cost of initial benefits resulting from a national unemployment rate greater than 4%. There is no fund and employer and employee contributions are adjusted yearly. In 1973 the rate of employee contributions was \$1.00 per \$100 of insurable earnings with a maximum of \$1.60 a week. The Department of National Revenue, Taxation collects the contributions. Persons formerly not contributing either because of their occupation or by virtue of being over the salary ceiling are paying a preferred rate for the first three years. For those who had been excluded because of their occupation, the preferred rate is portable. However, persons formerly excluded because of the salary ceiling pay the preferred rate only as long as they remain with the employer they were with on January 2, 1972.

Under the new program, the duration of benefit is not determined solely by how long a person has worked. A claimant can draw benefits for a maximum of 51 weeks depending on his employment history and prevailing economic conditions, providing he has contributed for at least eight weeks in the last 52 and he is available, capable and searching for work. Persons with 20 or more weeks of insured earnings (a "major labour force attachment") are eligible for a wider range of benefit that includes a pre-payment of three weeks of regular benefit for work-shortage lay-offs, benefit payments when the interruption in earnings is caused by illness or pregnancy, and three weeks retirement benefit for older workers.

Sickness benefit is available for a maximum of 15 weeks for persons with a major labour force attachment whose earnings are interrupted by illness, injury or quarantine (excluding workmen's compensation). If a person is taken ill while on regular claim, sickness benefit is available but the combined duration of benefits during the initial benefit period cannot exceed 15 weeks.

Maternity benefit is available for eight weeks before confinement, the week of confinement and six weeks after, to women who have had a major labour force attachment. They must also have been part of the labour force at least 10 of the 20 weeks prior to the 30th week before the expected date of confinement.

Retirement benefit, available for three weeks, is paid in a lump sum to claimants with a major labour force attachment who are 65-70 years of age and who have signified they have left the labour force by applying for the Canada Pension Plan or the Quebec Pension Plan, and to persons over 70 years of age. The benefit is paid without a waiting period and without regard to earnings or availability.

The benefit rate for all claims is two thirds of average insured earnings in the qualifying period to a maximum of \$107 a week in 1973 and with a minimum of \$20 a week. For claimants with dependents and whose average qualifying earnings are equal to or less than one third of the maximum weekly insurable earnings, the benefit rate is 75%. During later stages of benefit all claimants with dependents draw benefit at 75% of qualifying earnings subject to the \$107 maximum. The maximum insurable earnings and, therefore, the maximum benefit are subject to annual adjustment based on an index calculated from earnings of Canadian employees.

Income from employment in excess of 25% of the benefit rate is deducted. In the case of sickness and maternity, proceeds of wage-loss policies are deducted after the waiting period. All work-related income is deducted both during the waiting period and after the waiting period has been served.

The statistics in Table 8.27 summarize the Unemployment Insurance Commission's activities in the years 1968-73. Figures prior to July 1971 are affected by the Unemployment Insurance Act of 1955, which is described in the *1973 Canada Year Book* p 352.

To assess the impact of changing economic conditions on the insurance program, current operational data, such as claims filed and processed and payments made, are collected and published monthly by Statistics Canada. Current claims and payment data are useful for administrative purposes and are also a source of information to the public regarding financial and other aspects of the program. In addition to the monthly data on the operation of the Unemployment Insurance Act, detailed data on persons employed in insurable employment and benefit periods established and terminated are compiled annually and published in *Benefit*

periods established and terminated under the *Unemployment Insurance Act* (Catalogue No. 73-201). Data on persons insured under the Act are obtained from a sample of persons in insurable employment each year. Persons on claim are included.

8.6 Employment injuries and workmen's compensation

Fatal employment injuries. Data on fatal employment injuries compiled by the Canada Department of Labour are collected from provincial workmen's compensation boards, the Canadian Transport Commission, other government authorities and press reports. In 1972, 1,215 industrial workers sustained fatal injuries. Collisions, derailments or wrecks caused 297 deaths; being struck by an object, 269; falls and slips, 203; being caught in, on or between objects or vehicles, etc., 144; inhalations, contacts, absorptions, ingestions and industrial diseases, 103; conflagrations, temperature extremes and explosions, 57; contact with electric current, 47; over-exertion, 22; and the remaining 73 were the result of various miscellaneous accidents. Table 8.28 presents statistics on fatal employment injuries in 11 industries for the years 1970-72. Employment injuries, extent of disability and amount of compensation paid are reported by province for 1971 and 1972 in Table 8.29. In 1972, 849,899 injuries resulted in \$359.0 million in compensation compared with 826,652 injuries and \$314.4 million in compensation in 1971.

8.7 Organized labour

8.7.1 Union membership

At January 1, 1972 labour unions reported a total of 2.4 million members in Canada, an increase of 7.2% over 1971 (Table 8.30). Union membership comprised 34.4% of non-agricultural paid workers and 27.6% of the total civilian labour force in 1972. Membership, by type of union and affiliation, is presented in Table 8.31. Canadian Labour Congress (CLC) affiliates, with 1.7 million members in 1972, accounted for 72.8% of total union membership in Canada, compared with 74.8% in 1971. Of the total in CLC affiliates in 1972, 1.2 million members belonged to unions that were also affiliated with the American Federation of Labor and Congress of Industrial Organizations (AFL—CIO) in the United States; membership of unions affiliated with the CLC but not holding affiliation with the AFL—CIO totalled 529,559 or 22.3% of the total. Federations affiliated with the Quebec-based Confederation of National Trade Unions (CNTU) had 218,621 members or 9.2% of total union membership in Canada; the Canadian Council of Unions (CCU) represented 10,511 members or 0.5%; and the remaining 17.5% belonged to various unaffiliated international and national unions and independent local organizations.

International unions with headquarters in the United States accounted for 59.6% of the 1972 membership, compared with 62.0% in 1971; national and regional unions, which charter locals in Canada only, made up 37.7% (34.9% in 1971). Independent local organizations and local unions chartered by the CLC and the CNTU accounted for the remaining 2.7%.

In 1972, 20 unions reported membership of 30,000 or more. Ten unions reported 50,000 or more members, accounting for 39% of the total membership. The 10 listed with their affiliation, ranked as follows in 1972 (1971 rank in parentheses):

- 1 (1) United Steelworkers of America (AFL—CIO/CLC), 165,055
- 2 (2) Canadian Union of Public Employees (CLC), 157,919
- 3 (3) Public Service Alliance of Canada (CLC), 129,652
- 4 (4) International Union, United Automobile, Aerospace and Agricultural Implement Workers of America (CLC), 102,933
- 5 (5) United Brotherhood of Carpenters and Joiners of America (AFL—CIO/CLC), 74,362
- 6 (not included) Quebec Teachers' Corporation (Ind.), 70,000
- 7 (6) International Brotherhood of Teamsters, Chauffeurs, Warehousemen and Helpers of America (Ind.), 60,560
- 8 (8) Service Employees' National Federation, Inc. (CNTU), 56,603
- 9 (7) International Brotherhood of Electrical Workers (AFL—CIO/CLC), 56,026
- 10 (fewer than 50,000) International Woodworkers of America (AFL—CIO/CLC), 53,158.

8.7.2 Wages and collective agreements

The Canada Department of Labour publishes wage settlements data for collective agreements on a quarterly basis. The agreements covered are limited to negotiating units of 500 or more employees in all industries, except construction. The base rate for a negotiating unit is defined as the lowest rate of pay, expressed in hourly terms, for the lowest paid classification used for qualified workers in the bargaining unit. In most cases the base rate represents pay for an unskilled or semi-skilled classification of workers. However, this is not so in contracts covering only skilled and/or professional workers. The wage data, therefore, are not necessarily representative of the average increases enjoyed by the workers in the negotiating unit as a whole. Nevertheless, the data on numbers of agreements and workers refer to all occupational groups in the negotiating unit.

Wage-rate data given in Tables 8.32 and 8.33 indicate that approximately 1.5 million workers were covered by 800 collective agreements at December 31, 1973. The average base rate rose 26.7 cents, or 8.0% during the 12-month period ended December 31, 1973, compared with an increase of 25.1 cents or 8.1% during the preceding 12-month period. On a year-over-year basis the consumer price index rose by 9.1% during the 12-month period ended December 31, 1973, and by 5.1% during the preceding 12-month period. When the wage increases are deflated by the consumer price index increase, the average base rate decreased in real terms by 1.0% in 1973 and increased by 2.9% in 1972.

Additional data are available from the Canada Department of Labour on wage settlements during quarterly periods, including number of agreements settled, number of employees covered and duration of contracts. The agreements covered are again limited to negotiating units of 500 or more employees in all industries except construction. Details are not given here but, for 1973 as a whole, 350 contracts, affecting the wage rates of about 652,675 workers, were settled. On the average the 350 settlements provided an annual percentage increase in base rate equal to 9.7% simple or 9.2% compound, over the term of the contracts. The comparable percentage for 1972 was 8.1% simple or 7.7% compound.

During 1973 settlements of one-year duration produced increases averaging 9.4%, those of two-year duration 12.0% and 8.0% for the first and second years, respectively; and those of three-year duration, 10.5%, 6.3% and 6.6% for the first, second and third years of the contract. These increases compare with those of 1972 as follows: one-year agreements, average increases of 7.9%; two-year agreements, average increases of 10.3% and 6.8%; and three-year agreements, average increases of 8.5%, 5.9% and 5.9% for the first, second and third years, respectively, of the contract.

8.8 Strikes and lockouts

Statistical information on strikes and lockouts in Canada is compiled by the Economics and Research Branch of the Canada Department of Labour on the basis of reports from Canada Manpower Centres and provincial departments of labour. Table 8.34 presents a breakdown by industry of strikes and lockouts in 1972 involving five or more workers and continuing for 10 or more man-days. The 598 work stoppages reported involved 706,474 workers and 7.8 million man-days.

The developments leading to work stoppages are often too complex to make it practicable to distinguish statistically between strikes on the one hand and lockouts on the other. However, a work stoppage that is clearly a lockout is not often encountered. The number of workers involved includes all workers reported on strike or locked out, whether or not they all belonged to the unions directly involved in the disputes leading to work stoppages. Workers indirectly affected, such as those laid off as a result of a work stoppage, are not included. Duration of strikes and lockouts in terms of man-days is calculated by multiplying the number of workers involved in each work stoppage by the number of working days the stoppage was in progress. The data on duration of work stoppages in man-days are provided to facilitate comparison of work stoppages in terms of a common denominator. They are not intended as a measure of the loss of productive time to the economy.

Sources

- 8.1.1 Public Relations Branch, Canada Department of Labour.
- 8.1.2 Information Service, Department of Manpower and Immigration.
- 8.1.3 Public Relations Branch, Canada Department of Labour.
- 8.2.1 Labour Force Survey Division, Household Statistics Branch, Statistics Canada.
- 8.2.2 Census Characteristics Division, Census Field, Statistics Canada.
- 8.3.1 - 8.3.3 Labour Division, General Statistics Branch, Statistics Canada.
- 8.3.4 Public Relations Division, Canada Department of Labour.
- 8.4 - 8.5 Labour Division, General Statistics Branch, Statistics Canada.
- 8.6 - 8.8 Public Relations Branch, Canada Department of Labour.

Tables

..	not available	e	estimate
...	not appropriate or not applicable	p	preliminary
—	nil or zero	r	revised
--	too small to be expressed	certain tables may not add due to rounding	

8.1 Estimates of the civilian labour force and its main components, annual averages 1964-73

Year	Civilian population (14 years of age and over) '000	Civilian labour force (14 years of age and over)			Unem- ployed '000	Total labour force '000	Persons not in the labour force (14 years of age and over) '000	Un- employ- ment rate %	Partici- pation rate %
		Employed	Other	Total					
		Paid workers '000	'000	'000					
1964	12,817	5,466	1,143	6,609	324	6,933	5,884	4.7	54.1
1965	13,128	5,760	1,102	6,862	280	7,141	5,986	3.9	54.4
1966	13,475	6,096	1,056	7,152	267	7,420	6,055	3.6	55.1
1967	13,874	6,305	1,074	7,379	315	7,694	6,179	4.1	55.5
1968	14,264	6,490	1,047	7,537	382	7,919	6,344	4.8	55.5
1969	14,638	6,720	1,060	7,780	382	8,162	6,475	4.7	55.8
1970	15,016	6,839	1,040	7,879	495	8,374	6,642	5.9	55.8
1971	15,388	7,029	1,050	8,079	552	8,631	6,757	6.4	56.1
1972	15,747	7,310	1,019	8,329	562	8,891	6,856	6.3	56.5
1973	16,125	7,757	1,002	8,759	520	9,279	6,846	5.6	57.5

8.2 Distribution of population in the labour force and non-labour force categories, by age and sex, 1964-73

Sex, age and year	Population '000	Labour force			Not in labour force '000	Partici- pation rate %	Unemploy- ment rate %
		Employed '000	Unem- ployed '000	Total '000			
Male							
1964	6,351	4,698	264	4,961	1,390	78.1	5.3
1965	6,505	4,842	224	5,065	1,440	77.9	4.4
1966	6,678	4,983	209	5,193	1,486	77.8	4.0
1967	6,876	5,083	246	5,329	1,547	77.5	4.6
1968	7,070	5,146	297	5,443	1,626	77.0	5.5
1969	7,255	5,272	288	5,560	1,695	76.6	5.2
1970	7,441	5,310	374	5,684	1,757	76.4	6.6
1971	7,622	5,392	408	5,800	1,822	76.1	7.0
1972	7,795	5,533	405	5,938	1,857	76.2	6.8
1973	7,978	5,767	360	6,127	1,851	76.8	5.9
14-24 years							
1964	1,658	853	92	945	712	57.0	9.7
1965	1,746	922	76	998	748	57.2	7.6
1966	1,837	980	75	1,055	782	57.4	7.1
1967	1,931	1,027	90	1,117	815	57.8	8.1
1968	2,022	1,047	113	1,160	862	57.4	9.7
1969	2,107	1,088	113	1,201	906	57.0	9.4
1970	2,187	1,098	155	1,253	935	57.3	12.4
1971	2,259	1,131	173	1,304	955	57.7	13.3
1972	2,319	1,193	179	1,372	947	59.2	13.0
1973	2,379	1,298	163	1,461	918	61.4	11.2
25+ years							
1964	4,693	3,844	172	4,016	678	85.6	4.3
1965	4,759	3,919	148	4,067	692	85.5	3.6
1966	4,841	4,003	135	4,138	704	85.5	3.3
1967	4,945	4,057	155	4,212	732	85.2	3.7
1968	5,048	4,099	184	4,283	764	84.8	4.3
1969	5,148	4,184	175	4,359	789	84.7	4.0
1970	5,254	4,212	219	4,431	822	84.3	4.9
1971	5,363	4,261	235	4,496	867	83.8	5.2
1972	5,475	4,340	226	4,566	909	83.4	4.9
1973	5,600	4,470	197	4,666	933	83.3	4.2
Female							
1964	6,466	1,911	61	1,972	4,494	30.5	3.1
1965	6,623	2,020	56	2,076	4,547	31.3	2.7
1966	6,796	2,169	58	2,227	4,570	32.8	2.6
1967	6,997	2,296	70	2,365	4,632	33.8	3.0
1968	7,194	2,391	85	2,476	4,718	34.4	3.4
1969	7,383	2,508	94	2,602	4,780	35.2	3.6
1970	7,575	2,569	121	2,690	4,885	35.5	4.5
1971	7,766	2,687	144	2,831	4,935	36.5	5.1
1972	7,952	2,796	157	2,953	4,999	37.1	5.3
1973	8,146	2,992	160	3,152	4,995	38.7	5.1
14-24 years							
1964	1,656	599	34	633	1,023	38.2	5.4
1965	1,732	643	32	675	1,057	39.0	4.7
1966	1,811	710	32	742	1,069	41.0	4.3
1967	1,895	749	40	790	1,105	41.7	5.1
1968	1,975	788	50	838	1,136	42.5	6.0

8.2 Distribution of population in the labour force and non-labour force categories, by age and sex, 1964-73 (concluded)

Sex, age and year	Population '000	Labour force			Not in labour force '000	Partici- pation rate %	Unemploy- ment rate %
		Employed '000	Unem- ployed '000	Total '000			
14-24 years (concluded)							
1969	2,045	826	52	878	1,167	42.9	5.9
1970	2,113	825	69	894	1,219	42.3	7.7
1971	2,174	861	83	944	1,230	43.4	8.8
1972	2,228	902	85	987	1,241	44.3	8.6
1973	2,280	970	87	1,058	1,222	46.4	8.2
25+ years							
1964	4,810	1,312	27	1,339	3,471	27.8	2.0
1965	4,891	1,377	24	1,401	3,490	28.6	1.7
1966	4,985	1,459	26	1,485	3,501	29.8	1.8
1967	5,102	1,546	30	1,576	3,527	30.9	1.9
1968	5,219	1,603	35	1,638	3,582	31.4	2.1
1969	5,338	1,682	42	1,724	3,613	32.3	2.4
1970	5,462	1,744	52	1,796	3,666	32.9	2.9
1971	5,592	1,826	62	1,887	3,705	33.7	3.3
1972	5,724	1,894	72	1,966	3,758	34.3	3.7
1973	5,867	2,021	73	2,094	3,773	35.7	3.5

8.3 Estimates of employment and unemployment, by region, 1964-73 (thousands)

Year	Atlantic		Quebec		Ontario		Prairies		British Columbia	
	Em- plov- ment	Unem- plov- ment	Em- plov- ment	Unem- plov- ment	Em- plov- ment	Unem- plov- ment	Em- plov- ment	Unem- plov- ment	Em- plov- ment	Unem- plov- ment
1964	542	46	1,827	124	2,473	83	1,162	37	605	34
1965	566	45	1,912	109	2,548	66	1,196	31	639	28
1966	586	40	2,016	100	2,651	69	1,222	26	678	32
1967	593	42	2,080	116	2,745	89	1,238	29	723	39
1968	596	47	2,082	145	2,830	104	1,280	39	750	47
1969	605	49	2,132	158	2,936	95	1,312	39	795	42
1970	609	50	2,144	183	2,996	134	1,320	61	810	67
1971	618	58	2,197	197	3,079	170	1,338	63	847	64
1972	635	63	2,225	201	3,218	162	1,372	64	879	72
1973	676	66	2,353	189	3,366	142	1,426	58	937	65

8.4 Percentage distribution of the employed, by industrial group, 1964-73

Year	Total employed '000	Agri- culture %	Other primary indus- tries %	Manu- fac- turing %	Con- struc- tion %	Trans- porta- tion, commu- nication and other utilities %	Trade %	Finance, insurance and real estate %	Service ¹ %
1964	6,609	9.5	3.0	25.0	6.2	8.9	16.7	4.0	26.7
1965	6,862	8.7	3.4	23.8	6.7	9.0	16.7	4.1	27.6
1966	7,152	7.6	3.1	24.4	7.0	8.7	16.5	4.2	28.5
1967	7,379	7.6	3.0	23.8	6.4	8.9	16.6	4.2	29.5
1968	7,537	7.2	2.9	23.3	6.2	8.9	16.7	4.3	30.4
1969	7,780	6.9	2.8	23.4	6.2	8.9	16.6	4.6	30.7
1970	7,879	6.5	2.8	22.7	6.0	8.8	16.8	4.6	31.9
1971	8,079	6.3	2.8	22.2	6.1	8.7	16.5	4.8	32.7
1972	8,329	5.8	2.6	22.3	6.0	8.8	16.9	4.6	33.0
1973	8,759	5.3	2.6	22.5	6.3	8.8	17.1	4.7	32.7

¹Includes public administration and defence.

8.5 Population 15 years of age and over in the labour force, by sex, Canada¹, 1911-71

Year	Population 15 and over		Labour force ²		Male %	Female %	Females to 1,000 males
	Male	Female	Male No.	Female No.			
1911	2,611,813	2,206,772	2,341,437	357,044	89.6	16.2	152
1921	2,998,655	2,757,164	2,658,463	485,140	88.7	17.6	182
1931	3,710,062	3,376,021	3,244,788	663,329	87.5	19.6	204
1941 ³	4,274,205	4,022,508	3,665,880	832,261	85.8	20.7	227
1951	4,910,639	4,831,453	4,114,407	1,162,232	83.8	24.1	282
1961	6,039,232	5,983,979	4,694,294	1,763,862	77.7	29.5	376
1971	7,523,245	7,634,370	5,698,320	2,990,160	75.7	39.2	528

The "gainfully occupied" rather than "labour force" concept was used prior to 1951 to determine labour force status. See 1961 Census Monograph *Historical estimates of the Canadian labour force* (Cat. No. 99-549) for explanation of differences in these concepts and estimates for 1911-61 on a more comparable basis.

¹Excludes Yukon Territory and Northwest Territories for all years, and Newfoundland for years prior to 1951.

²Excludes persons seeking work who have never been employed.

³Includes persons in the active Canadian Forces on June 2, 1941.

8.6 Population 15 years of age and over in the total labour force, by sex and by province, 1961 and 1971

Province	Sex	Population 15 and over		Labour force			
		1961	1971	1961 No.	1971 No.	1961 %	1971 %
Newfoundland	M	137,645	166,865	89,839	109,490	65.3	65.6
	F	128,645	160,665	23,932	42,110	18.6	26.2
Prince Edward Island	M	34,239	38,305	26,188	28,850	76.5	75.3
	F	32,689	38,070	8,151	14,710	24.9	38.6
Nova Scotia	M	243,047	273,410	179,834	198,360	74.0	72.6
	F	237,632	274,825	58,916	93,770	24.8	34.1
New Brunswick	M	186,341	215,240	133,462	153,565	71.6	71.3
	F	184,408	216,255	46,240	74,175	25.1	34.3
Quebec	M	1,680,630	2,084,395	1,298,849	1,488,095	77.3	71.4
	F	1,715,186	2,157,785	482,867	754,740	28.2	35.0
Ontario	M	2,106,048	2,712,710	1,707,392	2,178,000	81.1	80.3
	F	2,122,295	2,783,200	697,420	1,232,825	32.9	44.3
Manitoba	M	315,107	349,065	246,938	270,770	78.4	77.6
	F	306,473	352,415	96,990	149,135	31.6	42.3
Saskatchewan	M	318,314	328,180	249,077	252,235	78.2	76.9
	F	291,953	317,740	77,659	124,585	26.6	39.2
Alberta	M	448,820	565,010	363,021	455,080	80.9	80.5
	F	413,800	548,410	128,466	243,520	31.0	44.4
British Columbia	M	569,041	790,055	423,929	612,570	74.5	77.5
	F	550,898	785,005	157,466	317,460	28.6	40.4
Yukon Territory	M	5,471	6,625	4,843	5,640	88.5	85.1
	F	3,872	5,395	1,414	2,610	36.5	48.4
Northwest Territories	M	8,099	10,600	6,399	7,575	79.0	71.5
	F	5,672	9,270	1,064	3,450	18.8	37.2
Canada	M	6,052,802	7,540,470	4,729,771	5,760,245	78.1	76.4
	F	5,993,523	7,649,035	1,780,585	3,053,095	29.7	39.9

8.7 Population 15 years of age and over in the labour force by selected characteristics, Canada, 1971

Age group, marital status and schooling	Population 15 and over		Labour force			
	Male	Female	Male No.	Female No.	Male %	Female %
Age group						
15-19 years	1,075,000	1,037,695	500,910	383,530	46.6	37.0
20-24 "	943,035	942,860	816,010	592,360	86.5	62.8
25-34 "	1,464,420	1,428,000	1,355,920	636,095	92.6	44.5
35-44 "	1,287,265	1,240,905	1,194,705	544,385	92.8	43.9
45-54 "	1,133,660	1,159,975	1,023,715	515,325	90.3	44.4
55-64 "	854,515	878,225	684,280	302,060	80.1	34.4
65 years and over	782,570	961,370	184,700	79,350	23.6	8.3
Marital status						
Single	2,377,585	1,905,805	1,508,970	1,018,815	63.5	53.5
Married	4,883,350	4,875,945	4,120,465	1,803,870	84.4	37.0
Widowed or divorced	279,535	867,285	130,810	230,410	46.8	26.6
Level of schooling						
Less than Grade 5	509,215	454,215	244,890	85,180	48.1	18.8
Grades 5-8	2,103,710	2,014,185	1,526,495	544,935	72.6	27.0
Grades 9-11	2,607,900	2,875,690	1,979,000	1,132,865	75.9	39.4
Grades 12-13	1,323,000	1,656,970	1,119,935	885,455	84.6	53.4
Some university	504,040	420,725	441,210	256,310	87.5	60.9
University degree	492,605	227,255	448,720	148,350	91.1	65.3
Total	7,540,470	7,649,035	5,760,245	3,053,095	76.4	39.9

8.8 Labour force¹ 15 years of age and over, by major occupation group and sex, Canada, 1971

Occupation group	Numerical distribution			Percentage distribution		
	Male	Female	Total	Male	Female	Total
Managerial, administrative	313,935	58,310	372,245	5.6	2.0	4.3
Natural sciences, engineering and mathematics	217,025	17,105	234,130	3.8	0.6	2.7
Social sciences	49,525	29,530	79,055	0.9	1.0	0.9
Religion	19,880	3,710	23,590	0.4	0.1	0.3
Teaching	138,170	211,120	349,295	2.4	7.1	4.0
Medicine and health	83,865	242,690	326,555	1.5	8.2	3.8
Art, literature and recreation	58,585	21,895	80,480	1.0	0.7	0.9
Clerical	433,380	940,180	1,373,565	7.6	31.8	15.9
Sales	567,985	247,760	815,740	10.0	8.4	9.5
Service	521,930	447,980	969,920	9.2	15.1	11.2
Farming, horticulture and animal husbandry	405,300	106,845	512,150	7.2	3.6	5.9
Fishing, hunting and trapping	26,655	525	27,175	0.5	--	0.3
Forestry and logging	65,850	1,415	67,260	1.2	--	0.8
Mining and quarrying	58,780	375	59,160	1.0	--	0.7

8.8 Labour force¹ 15 years of age and over, by major occupation group and sex, Canada, 1971 (concluded)

Occupation group	Numerical distribution			Percentage distribution		
	Male	Female	Total	Male	Female	Total
Processing	275,175	59,565	334,740	4.9	2.0	3.9
Machining	227,260	13,675	240,935	4.0	0.5	2.8
Product fabricating, assembling and repairing	484,140	150,205	634,355	8.5	5.1	7.4
Construction trades	563,435	5,125	568,565	9.9	0.2	6.6
Transport equipment operation	330,240	8,190	338,435	5.8	0.3	3.9
Materials handling	165,385	40,455	205,840	2.9	1.4	2.4
Other crafts and equipment operation	95,295	13,540	108,840	1.7	0.5	1.3
Occupations, n.e.c.	145,905	21,730	167,635	2.6	0.7	1.9
Occupations not stated	418,000	319,275	737,270	7.4	10.8	8.6
All occupations	5,665,715	2,961,210	8,626,925	100.0	100.0	100.0

n.e.c. = not elsewhere classified.

¹Excludes persons looking for work who last worked prior to January 1, 1970 or who never worked.**8.9 Labour force¹ 15 years of age and over, by major occupation group, and by province, 1971**

Occupation group	Province or territory					
	Nfld.	PEI	NS	NB	Que.	Ont.
Managerial, administrative	5,095	1,205	9,645	7,050	103,120	157,070
Natural sciences, engineering and mathematics	3,035	635	6,410	4,560	54,145	104,950
Social sciences	745	285	2,345	1,655	20,695	32,785
Religion	625	220	1,105	1,060	7,115	7,235
Teaching	6,950	1,935	12,670	9,905	97,535	128,500
Medicine and health	5,755	1,810	11,640	8,400	81,035	124,360
Art, literature and recreation	785	285	2,020	1,305	22,805	34,100
Clerical	16,900	4,225	38,045	29,780	346,385	590,270
Sales	13,480	3,430	27,600	21,020	197,075	320,495
Service	16,245	5,715	44,865	29,535	226,305	355,935
Farming, horticulture and animal husbandry	1,555	6,100	8,505	7,710	77,905	142,785
Fishing, hunting and trapping	7,265	2,200	6,555	2,600	1,945	1,185
Forestry and logging	2,275	130	3,035	6,520	20,040	11,650
Mining and quarrying	2,130	55	3,520	1,510	11,730	19,735
Processing	9,400	2,365	12,995	13,890	97,020	123,180
Machining	1,990	325	5,460	4,190	58,045	127,555
Product fabricating, assembling and repairing	6,395	1,275	14,905	11,695	195,030	278,240
Construction trades	15,040	3,240	25,645	19,650	126,490	208,675
Transport equipment operation	9,440	1,815	14,255	10,810	85,805	120,640
Materials handling	4,235	690	7,225	6,830	39,250	84,045
Other crafts and equipment operation	2,170	295	3,420	2,705	28,270	46,125
Occupations, n.e.c.	1,985	690	2,795	2,330	49,840	76,170
Occupations not stated	14,500	4,085	21,785	18,815	221,580	258,650
All occupations	147,995	42,995	286,440	223,530	2,169,150	3,354,355
	Man.	Sask.	Alta.	BC	YT and NWT	Canada
Managerial, administrative	16,755	11,890	27,120	32,570	735	372,245
Natural sciences, engineering and mathematics	9,865	5,980	20,305	23,615	635	234,130
Social sciences	3,770	2,485	5,895	8,220	185	79,055
Religion	1,195	1,515	1,685	1,750	90	23,590
Teaching	16,065	14,970	28,220	31,730	815	349,295
Medicine and health	16,860	14,435	27,725	34,035	500	326,555
Art, literature and recreation	3,410	2,150	5,040	8,395	180	80,480
Clerical	63,590	39,975	100,310	141,740	2,335	1,373,565
Sales	37,580	31,860	66,105	96,100	995	815,740
Service	48,530	40,040	80,575	119,430	2,745	969,920
Farming, horticulture and animal husbandry	48,800	101,655	89,320	27,750	55	512,150
Fishing, hunting and trapping	310	260	230	4,240	390	27,175
Forestry and logging	975	1,085	2,135	19,245	175	67,260
Mining and quarrying	3,410	3,185	7,375	5,730	780	59,160
Processing	10,085	5,990	15,180	44,330	315	334,740
Machining	8,410	3,630	11,605	19,480	250	240,935
Product fabricating, assembling and repairing	28,015	13,590	31,265	52,855	1,090	634,355
Construction trades	27,325	20,330	51,715	68,850	1,595	568,565
Transport equipment operation	16,080	12,500	26,300	39,715	1,085	338,435
Materials handling	8,830	7,035	14,910	32,350	440	205,840
Other crafts and equipment operation	4,890	3,345	7,040	10,200	385	108,840
Occupations, n.e.c.	7,450	4,950	11,925	9,170	325	167,635
Occupations not stated	31,720	28,210	56,305	78,595	3,020	737,270
All occupations	413,915	371,065	688,285	910,090	19,105	8,626,925

¹See footnote to Table 8.8.

8.10 Labour force¹ 15 years of age and over, by industry division and sex, Canada, 1971

Industry division	Numerical distribution			Percentage distribution		
	Male	Female	Total	Male	Female	Total
Agriculture	369,625	111,560	481,190	6.5	3.8	5.6
Forestry	71,025	3,355	74,380	1.3	0.1	0.9
Fishing and trapping	24,540	900	25,435	0.4	-	0.3
Mines, quarries and oil wells	129,670	9,365	139,035	2.3	0.3	1.6
Manufacturing	1,302,635	404,695	1,707,330	23.0	13.7	19.8
Construction	511,945	26,280	538,220	9.0	0.9	6.2
Transportation, communication and other utilities	557,085	113,980	671,065	9.8	3.8	7.8
Trade	803,100	466,190	1,269,295	14.2	15.7	14.7
Finance, insurance and real estate	173,825	184,235	358,060	3.1	6.2	4.1
Community, business and personal service	865,345	1,176,045	2,041,385	15.3	39.7	23.7
Public administration and defence	476,220	163,365	639,585	8.4	5.5	7.4
Unspecified or not stated	380,700	301,240	681,940	6.7	10.2	7.9
All industries	5,665,715	2,961,210	8,626,925	100.0	100.0	100.0

¹See footnote to Table 8.8.**8.11 Labour force¹ 15 years of age and over, by industry division and by province, 1971**

Industry division	Province or territory					
	Nfld.	PEI	NS	NB	Que.	Ont.
Agriculture	1,175	5,845	7,110	6,670	72,975	129,910
Forestry	2,510	110	3,115	6,710	21,915	8,470
Fishing and trapping	6,810	2,125	5,590	2,535	1,880	1,425
Mines, quarries and oil wells	4,945	45	6,160	3,185	25,335	40,545
Manufacturing	17,605	4,205	41,260	36,430	501,825	819,335
Construction	15,535	2,815	21,530	15,365	119,615	205,785
Transportation, communication and other utilities	16,405	3,105	23,945	22,590	171,785	222,010
Trade	23,135	5,900	43,480	34,440	294,595	497,560
Finance, insurance and real estate	2,615	850	8,840	5,975	90,570	155,505
Community, business and personal service	32,360	9,420	66,335	50,155	521,500	787,260
Public administration and defence	11,805	4,735	38,555	21,880	140,010	247,455
Unspecified or not stated	13,095	3,835	20,515	17,595	207,150	239,100
All industries	147,990	42,995	286,440	223,525	2,169,150	3,354,360
	Man.	Sask.	Alta.	BC	YT and NWT	Canada
Agriculture	47,070	100,680	86,705	23,050	15	481,190
Forestry	710	910	2,070	27,690	170	74,380
Fishing and trapping	345	285	210	3,840	395	25,435
Mines, quarries and oil wells	7,805	7,370	26,590	14,710	2,345	139,035
Manufacturing	56,945	19,895	62,420	146,925	490	1,707,330
Construction	22,320	17,930	52,430	63,910	1,000	538,220
Transportation, communication and other utilities	40,020	27,735	54,545	86,645	2,280	671,065
Trade	65,215	51,695	104,200	147,275	1,790	1,269,295
Finance, insurance and real estate	15,810	10,595	25,260	41,730	300	358,060
Community, business and personal service	94,520	81,675	168,490	225,600	4,085	2,041,385
Public administration and defence	34,010	26,430	54,130	57,065	3,510	639,585
Unspecified or not stated	29,150	25,870	51,230	71,660	2,730	681,940
All industries	413,920	371,065	688,290	910,085	19,105	8,626,925

¹See footnote to Table 8.8.**8.12 Annual average index numbers¹ of employment, by industrial division, 1967-72, and monthly indexes 1972 and 1973**

Year and month	For- estry	Mining (incl. milling)	Manu- factur- ing	Con- struc- tion	Trans- porta- tion, commu- nication and other utilities	Trade	Finance, insur- ance and real estate	Service ^a	Indus- trial com- posite
Averages									
1967	102.3	109.0	123.2	122.5	111.0	125.8	126.0	153.4	122.6
1968	91.1	109.8	122.1	119.4	109.5	129.4	131.4	157.8	122.7
1969	88.7	107.9	125.2	119.1	111.9	136.6	138.8	171.8	126.9
1970	84.2	115.7	122.8	113.9	112.6	139.3	143.6	178.5	127.1
1971	79.4	114.8	121.6	115.5	114.6	140.3	145.9	186.4	127.8
1972P	76.3	110.4	123.7	109.7	116.0	146.2	148.7	193.5	129.9

8.12 Annual average index numbers¹ of employment, by industrial division, 1967-72, and monthly indexes 1972 and 1973 (concluded)

Year and month	For- estry	Mining (incl. milling)	Manu- factur- ing	Con- struc- tion	Trans- portation, commu- nication and other utilities	Trade	Finance, insur- ance and real estate	Service ²	Indus- trial com- posite
1972P									
January	62.9	109.6	119.4	95.1	112.4	141.0	144.9	181.3	124.3
February	63.9	109.1	119.9	94.9	112.5	139.7	146.2	185.2	124.7
March	58.4	110.7	121.2	96.4	113.2	142.4	147.3	186.7	126.0
April	51.3	109.2	122.1	102.4	114.3	143.8	147.6	190.8	127.3
May	71.6	111.8	124.6	110.2	115.6	145.9	148.5	195.6	130.3
June	76.1	111.3	125.1	119.2	118.7	146.4	150.0	201.6	132.3
July	88.5	109.8	123.6	121.9	118.6	142.4	150.6	202.2	131.4
August	94.5	110.8	126.7	125.7	118.4	143.4	149.9	204.2	133.3
September	94.1	111.9	127.3	123.0	117.6	147.3	149.7	198.3	133.5
October	90.3	111.3	126.2	120.5	118.3	151.0	150.6	195.2	133.4
November	86.0	110.6	125.8	110.3	117.0	155.6	150.3	193.5	132.8
December	78.5	108.9	122.9	92.4	115.5	155.6	149.1	187.8	129.5
1973P									
January	74.9	109.1	123.6	91.6	114.4	148.6	150.3	189.5	128.6
February	73.3	110.1	124.8	91.9	114.8	147.9	151.8	192.9	129.3
March	70.0	109.9	126.2	93.4	116.0	150.0	153.3	195.9	130.8
April	64.5	106.6	127.7	100.2	117.3	151.9	153.3	199.6	132.4
May	83.7	111.2	129.7	110.7	121.7	153.2	155.6	207.4	136.1
June	97.1	114.5	132.8	118.1	124.5	154.3	157.8	214.0	139.5
July	101.0	114.8	131.5	122.0	123.4	151.1	159.4	215.1	138.8
August	101.2	114.3	132.7	124.6	107.5	151.9	159.5	217.3	136.9
September	98.9	111.2	132.8	124.8	122.8	157.1	159.5	212.1	140.0
October	97.8	111.7	133.6	123.7	122.4	161.2	160.8	211.6	140.9
November	92.2	112.0	132.4	117.1	122.5	166.0	161.8	209.7	140.6
December	82.3	110.9	130.7	100.7	121.4	167.7	162.2	208.3	138.6

¹Indexes are calculated as at the last pay period of each month (1961 = 100).

²Consists mainly of hotels, restaurants, laundries, dry-cleaning establishments and recreational and business services.

8.13 Annual average index numbers¹ of employment, by industrial division and group, 1968-72

Industry	1968	1969	1970	1971P	1972P
FORESTRY	91.1	88.7	84.2	79.4	76.3
MINING (incl. milling)	109.8	107.9	115.7	114.8	110.4
Metals	103.8	97.4	106.9	106.1	100.7
Gold	56.4	51.1	45.4	34.5	35.4
Copper-gold-silver	120.5	121.3	125.4	123.5	142.0
Iron	134.1	122.6	135.1	132.5	124.7
Mineral fuels	103.4	102.6	108.9	112.7	115.1
Coal	78.2	69.6	74.0	77.9	78.7
Crude petroleum and natural gas	129.0	136.4	144.0	146.8	151.1
Non-metals (except fuels)	117.3	126.3	136.3	133.6	131.5
Asbestos	109.3	110.9	118.0	120.5	117.2
MANUFACTURING	122.1	125.2	122.8	121.6	123.7
Durable goods	131.7	136.7	132.8	131.4	134.9
Non-durable goods	114.4	115.9	114.7	113.7	114.7
Foods and beverages	110.2	109.1	109.1	108.6	107.9
Slaughtering and meat processing	105.1	102.1	102.4	105.8	104.8
Dairy products	103.6	101.6	102.9	100.2	98.1
Fish products	131.3	129.7	128.8	134.3	137.9
Fruit and vegetable processing	120.8	118.4	115.8	112.5	110.4
Grain mill products	103.4	102.7	107.1	105.6	102.8
Biscuits	104.9	106.0	103.7	100.4	101.7
Bakeries	96.0	95.9	94.0	91.1	88.7
Confectionery	110.3	107.2	103.8	101.9	96.4
Soft drinks	125.4	122.5	119.6	115.3	110.3
Distilleries	113.3	117.5	115.4	113.4	117.8
Breweries	97.3	97.8	99.6	105.0	104.6
Tobacco processing and products	101.2	97.8	95.4	94.6	92.8
Rubber products	120.0	123.7	112.2	111.7	118.4
Leather products	100.3	99.2	91.2	91.5	89.1
Shoes (except rubber)	94.9	94.3	86.0	87.6	81.7
Luggage, handbags and small leather goods	127.6	123.6	113.2	111.1	119.0
Textile products	117.8	119.8	113.7	114.8	122.3
Cotton yarn and cloth	89.7	86.9	78.2	76.5	75.1
Woollen yarn and cloth	90.6	89.9	88.0	83.7	87.3
Synthetic textiles	131.0	136.3	126.4	122.8	128.6
Knitting mills	113.7	117.3	112.5	112.2	116.4
Hosiery	108.1	113.1	106.0	95.6	92.5
Other knitting mills	117.3	120.2	116.7	122.2	131.0
Clothing	109.2	109.2	109.2	108.9	110.4
Men's clothing	113.6	114.5	119.3	119.7	124.1
Women's clothing	113.2	115.5	112.3	112.0	113.6
Wood products	108.4	113.0	108.1	115.9	121.3
Saw, shingle and planing mills	105.4	111.7	108.8	117.3	123.0

8.13 Annual average index numbers¹ of employment, by industrial division and group, 1968-72 (continued)

Industry	1968	1969	1970	1971P	1972P
MANUFACTURING (concluded)					
Furniture and fixtures	126.8	134.0	127.6	129.6	139.3
Household furniture	130.9	138.7	129.7	132.1	146.5
Paper and allied industries	117.6	121.7	121.1	119.4	119.6
Pulp and paper mills	112.7	116.3	116.3	115.4	114.9
Printing, publishing and allied industries	114.4	115.5	116.6	113.4	111.9
Commercial printing	116.9	117.8	118.9	116.1	114.4
Printing and publishing	109.6	110.8	111.3	108.4	106.3
Primary metal industries	125.6	123.2	130.5	128.9	127.5
Iron and steel mills	130.7	126.1	137.6	137.0	139.0
Iron foundries	144.5	153.2	143.5	130.0	136.0
Smelting and refining	113.2	107.3	119.7	118.9	109.0
Metal fabricating industries	130.1	135.7	133.9	130.9	133.3
Fabricated structural metals	108.6	117.1	122.8	112.4	98.3
Ornamental and architectural metals	119.0	125.3	122.4	121.4	123.2
Metal stamping, pressing and coating	138.3	144.6	138.2	138.5	147.7
Wire and wire products	135.4	138.6	136.0	133.7	136.7
Hardware, tools and cutlery	150.0	160.8	163.0	156.8	167.5
Heating equipment	104.5	106.6	103.0	96.7	98.6
Miscellaneous metal fabricating	130.5	130.1	127.8	127.9	134.1
Machinery (except electrical)	141.0	151.4	149.5	143.6	146.2
Agricultural implements	109.7	119.2	95.5	86.6	105.8
Miscellaneous machinery and equipment	143.4	152.5	153.2	146.0	148.5
Office and store machinery	172.8	191.2	207.9	210.8	190.7
Transportation equipment	147.6	155.6	141.7	144.3	152.5
Aircraft and parts	123.0	117.3	104.8	80.5	77.9
Motor vehicles	169.3	183.9	166.6	186.8	197.2
Assembling	170.0	181.6	160.9	175.9	180.0
Parts and accessories	166.8	180.5	162.7	184.7	194.2
Shipbuilding and repair	108.4	107.6	92.5	93.3	113.0
Electrical products	143.6	150.4	144.3	134.1	135.8
Major appliances (incl. non-electrical)	120.0	125.5	106.5	103.1	113.3
Household radios and televisions	119.9	130.4	124.9	121.4	144.6
Communications equipment	177.6	180.0	171.7	155.8	143.3
Non-metallic mineral products	116.8	119.3	115.3	113.6	117.9
Concrete products	115.8	124.4	123.7	135.9	133.9
Clay products	108.1	111.3	105.8	100.3	93.1
Glass and glass products	128.9	129.2	127.1	118.8	125.9
Petroleum and coal products	104.0	104.0	105.9	105.6	105.9
Petroleum refineries	94.4	92.2	93.8	91.9	89.8
Chemicals and chemical products	118.7	120.4	120.5	116.3	114.3
Pharmaceuticals and medicines	133.4	137.9	143.3	148.6	154.2
Paints and varnishes	106.4	109.6	108.9	108.3	105.6
Soap and cleaning compounds	102.5	102.3	98.8	96.0	94.8
Industrial chemicals	115.7	117.9	119.8	112.5	105.8
Miscellaneous manufacturing industries	137.8	149.4	151.8	151.9	157.7
CONSTRUCTION	119.4	119.1	113.9	115.5	109.7
Building	127.2	130.3	124.9	125.2	115.4
General contractors	111.2	110.7	103.6	104.1	93.2
Special trade contractors	144.2	151.1	147.6	147.7	138.7
Engineering	106.0	99.8	95.0	98.8	99.0
Highways, bridges and streets	90.2	84.0	81.0	82.0	81.1
Other engineering	127.0	120.1	113.0	120.3	121.5
TRANSPORTATION, COMMUNICATION AND OTHER UTILITIES	109.5	111.9	112.6	114.4	116.0
Transportation	105.8	107.3	106.9	107.4	108.5
Air transport and services	143.7	145.2	161.2	158.2	166.8
Water transport and services	99.8	101.2	100.7	99.4	95.3
Railway transport	88.4	86.3	84.2	83.9	84.1
Truck transport	133.6	138.7	135.0	137.1	134.6
Bus transport, interurban and rural	113.4	123.2	129.1	135.7	141.8
Urban transit	115.6	113.8	114.3	114.1	116.4
Highway and bridge maintenance	111.3	116.6	113.0	116.0	121.1
Storage	111.4	110.1	110.3	110.1	111.6
Grain elevators	107.4	102.5	102.4	103.5	102.9
Other storage and warehousing	122.6	131.4	131.9	127.8	135.0
Communication	116.3	121.3	125.7	130.4	134.6
Radio and television broadcasting	128.1	132.7	133.5	136.4	138.8
Telephone	118.2	119.0	123.0	125.7	129.2
Telegraph and cable	86.5	81.5	80.5	78.7	77.8
Post office	116.6	132.8	141.3	153.1	160.7
ELECTRIC POWER, GAS AND WATER	116.3	119.0	120.4	124.4	122.5
Electric power	118.3	121.6	124.6	128.9	125.5
Gas distribution	105.2	107.6	103.7	102.9	109.3
TRADE	129.4	136.6	139.3	140.3	146.2
Wholesale	122.5	129.0	132.8	132.8	135.1
Retail	133.2	140.7	142.8	144.3	152.2
Food stores	140.3	148.4	151.6	144.1	151.7
Department stores	131.6	136.9	135.6	139.9	149.2
Variety stores	124.7	132.5	132.6	132.2	138.4
Automotive product stores	141.5	148.3	149.2	155.7	159.6
FINANCE, INSURANCE AND REAL ESTATE	131.4	138.8	143.6	145.9	148.7
Financial institutions	134.3	143.5	148.2	148.5	155.9
Insurance and real estate	127.4	132.4	137.5	141.5	139.0
Insurance carriers	122.4	124.7	126.6	126.8	121.3

8.13 Annual average index numbers¹ of employment, by industrial division and group, 1968-72 (concluded)

Industry	1968	1969	1970	1971P	1972P
SERVICE	157.8	171.8	178.5	186.4	193.5
Recreational services	144.3	158.4	161.3	167.9	174.8
Business services	173.1	189.5	194.8	207.8	220.5
Personal services	145.7	157.2	162.3	167.9	172.8
Miscellaneous services	187.6	206.7	223.5	233.3	239.2
Industrial composite	122.7	126.9	127.1	127.8	129.9

¹Indexes refer to the last week of each month (1961 = 100).**8.14 Annual average index numbers¹ of employment, by province, 1968-72, and monthly indexes 1972 and 1973**

Year and month	Nfld.	PEI	NS	NB	Que.	Ont.	Man.	Sask.	Alta.	BC	Canada
Averages											
1968	119.3	131.9	114.3	116.5	117.7	126.1	115.6	119.5	128.7	128.8	122.7
1969	120.7	130.6	117.8	119.1	119.9	131.0	118.0	118.1	136.7	137.5	126.9
1970	121.8	134.0	114.3	119.2	119.3	131.6	117.7	113.2	138.2	139.3	127.1
1971	125.9	139.4	113.7	122.8	118.7	132.1	117.2	114.4	139.6	144.5	127.8
1972P	126.5	140.6	116.7	122.7	120.1	134.2	117.6	116.8	143.6	148.4	129.9
1972P											
January	114.4	125.7	109.0	114.4	114.9	129.6	113.6	109.5	135.4	141.5	124.3
February	113.1	121.2	108.9	112.6	115.3	129.4	113.8	110.8	137.6	144.1	124.7
March	113.0	121.8	110.8	112.6	116.3	130.5	114.8	111.8	139.2	147.9	126.0
April	118.1	127.7	111.8	113.6	117.2	132.2	115.8	113.5	138.7	148.6	127.3
May	127.3	140.5	117.8	122.0	119.7	135.4	119.2	118.9	143.5	146.0	130.3
June	134.3	151.7	125.0	130.8	122.5	137.3	120.6	120.3	147.9	140.2	132.3
July	134.2	159.1	123.6	132.2	121.1	133.9	119.7	121.8	148.7	151.1	131.4
August	140.5	159.7	123.3	132.3	123.6	135.7	119.8	122.2	150.0	153.1	133.3
September	136.7	154.2	118.2	130.3	124.1	136.5	120.1	121.2	147.8	154.5	133.5
October	133.6	149.3	117.5	127.5	124.2	137.3	119.6	119.4	146.8	153.0	133.4
November	129.8	142.6	119.5	125.6	122.6	137.7	118.3	117.8	146.0	152.0	132.8
December	122.4	133.6	114.8	118.7	119.7	134.5	115.2	114.6	143.3	149.0	129.5
1973P											
January	118.2	123.8	112.2	115.1	118.8	134.2	115.1	112.5	143.2	146.4	128.6
February	119.4	118.7	113.0	114.1	119.6	135.1	115.2	113.5	143.2	147.9	129.3
March	117.5	124.3	115.5	116.4	120.7	136.1	116.2	113.8	145.7	152.0	130.8
April	120.0	128.5	116.1	118.3	121.9	138.1	118.1	115.9	146.5	154.0	132.4
May	129.3	145.3	119.9	128.5	125.0	141.4	121.2	120.9	151.5	157.5	136.1
June	139.7	156.0	124.4	135.3	128.6	144.2	122.7	125.2	154.9	161.0	139.5
July	142.5	166.0	126.7	135.9	127.1	142.8	122.4	125.0	156.3	161.9	138.8
August	137.1	151.8	125.8	129.4	126.4	141.9	114.6	119.1	152.1	159.2	136.9
September	141.4	162.9	128.6	134.4	128.9	144.8	123.7	124.7	154.3	161.4	140.0
October	141.6	158.7	127.7	135.3	129.4	145.9	124.6	125.1	154.9	163.2	140.9
November	138.0	155.9	127.2	132.7	129.2	145.7	124.2	125.4	154.9	163.3	140.6
December	130.4	141.1	125.7	125.7	127.4	144.1	122.4	122.4	153.4	161.1	138.6

¹Indexes refer to the last week of each month (1961 = 100).**8.15 Annual average index numbers¹ of employment, by metropolitan area, 1968-72, and monthly indexes 1972 and 1973**

Year and month	Montreal	Quebec	Toronto	Ottawa-Hull	Hamilton	Windsor	Winnipeg	Vancouver
Averages								
1968	121.0	114.6	128.2	128.6	119.8	149.6	116.9	129.6
1969	122.7	118.1	134.3	137.7	121.2	152.7	121.2	140.0
1970	121.4	123.3	135.1	140.6	124.0	149.9	121.2	141.1
1971	120.2	129.8	135.5	143.1	123.6	150.0	120.1	144.9
1972P	120.9	132.1	139.0	146.8	123.9	153.4	120.2	149.8
1972P								
January	116.9	128.3	134.1	142.0	119.5	146.7	117.1	146.0
February	117.7	127.7	134.2	141.2	118.5	147.9	117.1	148.2
March	118.8	129.0	135.3	142.9	120.0	149.4	117.7	151.5
April	120.1	130.8	136.8	143.9	121.7	152.1	119.1	150.9
May	120.7	131.8	140.2	149.0	122.0	153.9	121.9	145.4
June	122.8	135.2	142.1	150.0	127.4	157.4	122.2	142.4
July	120.0	133.5	138.7	149.4	126.0	152.6	120.3	150.9
August	122.3	135.0	139.7	148.8	126.2	154.5	120.9	151.8
September	123.7	134.8	140.8	147.9	126.2	157.7	122.2	154.0
October	124.2	135.1	142.6	149.4	127.0	156.1	122.7	153.2
November	123.2	133.8	143.7	149.5	127.4	159.0	122.2	153.1
December	120.2	129.6	140.0	147.6	125.3	153.8	119.4	149.9
1973P								
January	121.3	128.0	140.0	147.1	124.2	153.3	118.0	147.4
February	121.5	128.9	141.2	149.1	124.5	153.9	118.9	149.0
March	123.0	129.9	142.4	150.6	125.4	153.7	119.7	152.7
April	123.9	132.5	144.2	153.3	127.4	156.8	121.7	154.2
May	126.0	129.6	147.4	157.9	130.7	160.1	124.0	156.4
June	128.2	134.6	150.3	162.4	131.4	165.8	124.6	159.1
July	125.3	135.2	147.7	161.2	131.5	163.0	123.9	159.1

8.15 Annual average index numbers¹ of employment, by metropolitan area, 1968-72, and monthly indexes 1972 and 1973 (concluded)

Year and month	Montreal	Quebec	Toronto	Ottawa-Hull	Hamilton	Windsor	Winnipeg	Vancouver
1973P (concluded)								
August	126.5	138.4	147.2	158.8	131.0	165.0	121.6	161.1
September	128.8	139.6	149.9	158.9	132.5	167.5	126.3	161.3
October	129.5	139.6	152.3	161.3	132.9	167.0	127.2	163.7
November	129.6	139.4	152.7	159.7	134.5	154.6	125.7	164.7
December	128.1	136.6	150.8	162.1	132.4	163.6	124.6	162.9

¹Indexes refer to the last week of each month (1961 = 100).

8.16 Annual index numbers of employment and average weekly earnings, by industry, province and urban area, 1970-72

Industry, province and urban area	Employment (1961 = 100)			Average weekly wages and salaries (dollars)		
	1970	1971	1972P	1970	1971	1972P
INDUSTRY						
Forestry	84.2	79.4	76.3	137.60	155.53	172.92
Mining (incl. milling)	115.7	114.8	110.4	164.70	177.00	190.29
Manufacturing	122.8	121.6	123.7	132.75	143.99	156.10
Durable goods ¹	132.8	131.4	134.9	142.87	155.33	168.09
Non-durable goods ¹	114.7	113.7	114.7	123.27	133.28	144.64
Construction	113.9	115.5	109.7	167.15	188.26	209.90
Transportation, communication and other utilities	112.6	114.6	116.0	142.35	154.14	167.94
Trade	139.3	140.3	146.2	100.50	108.45	117.58
Finance, insurance and real estate	143.6	145.9	148.7	120.52	129.59	140.95
Service	178.5	186.4	193.5	90.65	98.57	107.32
Industrial composite	127.1	127.8	129.9	126.82	137.64	149.22
PROVINCE						
Newfoundland	121.8	125.9	126.5	117.70	123.79	134.60
Prince Edward Island	134.0	139.4	140.6	83.82	89.97	101.02
Nova Scotia	114.3	113.7	116.7	104.21	112.82	123.20
New Brunswick	119.2	122.8	122.7	104.01	113.36	125.08
Quebec	119.3	118.7	120.1	122.38	132.04	142.86
Ontario	131.6	132.1	134.2	131.52	143.04	154.92
Manitoba	117.7	117.2	117.6	115.88	123.84	135.59
Saskatchewan	113.2	114.4	116.8	114.87	121.71	133.18
Alberta	138.2	139.6	143.6	128.15	138.78	149.94
British Columbia	139.3	144.5	148.4	137.97	152.50	165.08
URBAN AREA						
Corner Brook, Nfld.	104.8	100.3	95.5	125.77	130.70	139.38
St. John's Nfld.	134.9	141.3	156.7	100.20	109.67	122.62
Halifax, NS	120.8	120.5	124.7	105.77	115.95	126.61
Sydney, NS	90.7	90.6	89.8	111.62	119.83	125.05
Moncton, NB	136.8	142.6	141.6	98.79	108.66	118.01
Saint John, NB	113.9	119.1	118.5	105.50	119.72	130.33
Chicoutimi, Que.	113.6	113.5	111.6	143.12	150.59	165.24
Drummondville, Que.	117.2	121.1	127.4	100.52	110.44	119.44
Granby, Que.	106.9	109.4	115.1	101.64	109.04	115.58
Montreal, Que.	121.4	120.2	120.9	125.45	135.58	146.62
Ottawa, Ont.—Hull, Que.	140.6	143.1	146.8	119.17	130.21	142.46
Quebec, Que.	123.3	129.8	132.1	109.84	122.15	132.09
Rouyn—Noranda, Que.	107.3	100.1	98.0	124.91	130.34	149.06
St. Hyacinthe, Que.	124.0	124.3	126.6	96.25	105.34	112.18
Saint-Jean, Que.	123.0	128.8	140.9	105.96	115.74	125.52
St. Jérôme, Que.	114.2	121.3	126.4	103.61	116.27	127.40
Shawinigan, Que.	95.3	86.3	82.3	126.79	135.01	149.52
Sherbrooke, Que.	111.9	111.6	111.4	107.49	116.53	127.11
Sorel, Que.	157.9	154.6	165.8	143.91	151.03	165.10
Thetford Mines, Que.	120.8	123.0	122.9	130.63	139.21	146.22
Trois-Rivières, Que.	112.4	110.9	113.7	117.25	127.45	137.60
Valleyfield, Que.	129.1	127.6	128.4	129.81	136.15	145.47
Belleville, Ont.	127.0	128.9	132.0	110.54	121.41	130.03
Brampton, Ont.	289.3	291.6	301.3	128.93	140.63	157.12
Brantford, Ont.	130.8	124.8	128.7	117.18	128.74	141.90
Brockville, Ont.	129.9	129.3	125.2	124.19	133.68	147.06
Chatham, Ont.	138.8	143.2	155.2	129.12	141.90	163.36
Cornwall, Ont.	127.5	125.3	129.4	119.89	128.05	138.55
Guelph, Ont.	141.2	136.6	133.1	120.93	131.12	141.71
Hamilton, Ont.	124.0	123.6	123.9	135.49	147.65	159.90
Kingston, Ont.	125.6	122.5	124.2	121.24	132.28	143.00
Kitchener, Ont.	153.6	155.6	163.3	116.13	127.46	137.27
London, Ont.	124.4	123.8	128.3	121.41	132.56	144.42
Niagara Falls, Ont.	116.1	115.3	115.1	120.45	130.09	139.11
North Bay, Ont.	119.4	119.8	119.1	126.84	137.72	152.43

8.16 Annual index numbers of employment and average weekly earnings, by industry, province and urban area, 1970-72 (concluded)

Industry, province and urban area	Employment (1961 = 100)			Average weekly wages and salaries (dollars)		
	1970	1971	1972P	1970	1971	1972P
URBAN AREA (concluded)						
Oshawa, Ont.	121.9	131.2	133.1	145.56	164.65	179.68
Peterborough, Ont.	142.1	136.5	135.2	131.17	144.23	156.06
St. Catharines, Ont.	133.2	137.6	136.5	139.88	157.23	167.84
St. Thomas, Ont.	198.2	200.7	215.2	141.15	146.49	146.32
Sarnia, Ont.	135.9	127.7	131.0	161.99	170.81	168.92
Sault Ste. Marie, Ont.	124.0	123.6	123.0	149.19	160.85	172.58
Stratford, Ont.	147.8	153.0	168.7	110.95	121.02	127.99
Sudbury, Ont.	131.9	136.5	116.7	159.21	165.78	175.81
Thunder Bay, Ont.	125.6	135.5	137.5	124.69	141.58	149.81
Timmins, Ont.	72.0	77.2	76.3	116.59	133.24	142.97
Toronto, Ont.	135.1	135.5	139.0	133.67	144.88	156.51
Welland, Ont.	115.6	113.0	105.5	149.01	161.75	175.62
Windsor, Ont.	149.9	150.0	153.4	150.80	163.30	183.33
Woodstock, Ont.	150.1	149.7	154.2	117.65	129.07	141.57
Winnipeg, Man.	121.2	120.1	120.2	108.84	116.89	128.50
Regina, Sask.	118.5	123.7	123.2	110.64	117.42	129.49
Saskatoon, Sask.	132.6	129.5	131.4	109.12	113.92	123.91
Calgary, Alta.	147.2	149.7	155.4	126.73	137.36	148.12
Edmonton, Alta.	145.7	144.6	150.7	121.80	130.42	142.44
Vancouver, BC	141.1	144.9	149.8	133.90	148.86	161.10
Victoria, BC	131.0	128.8	132.5	117.30	128.39	136.84

¹Durable goods manufacturing includes wood products, furniture and fixtures, primary metal industries, metal fabricating industries, machinery (except electrical), transportation equipment, electrical products and non-metallic mineral products; non-durable goods manufacturing includes all other manufacturing industries.

8.17 Annual average weekly earnings, by industrial division, 1968-72, and monthly averages 1972 and 1973 (dollars)

Year and month	For- estry	Mining (incl. milling)	Manu- factur- ing	Con- struc- tion	Trans- portation, communi- cation and other utilities	Trade	Finance, insur- ance and real estate	Service ¹	Indus- trial com- posite
Averages									
1968	122.04	139.16	114.42	137.59	122.70	86.91	106.21	78.99	109.88
1969	133.60	148.93	122.97	150.68	131.03	93.81	113.83	84.23	117.64
1970	137.60	164.70	132.75	167.15	142.35	100.50	120.52	90.65	126.82
1971	155.53	177.00	143.99	188.26	154.14	108.45	129.59	98.57	137.64
1972P	172.92	190.29	156.10	209.90	167.94	117.58	140.95	107.32	149.22
1972P									
January	165.90	183.01	151.34	198.03	162.47	112.78	135.36	103.14	143.68
February	175.00	186.66	151.51	203.34	163.89	113.55	136.68	103.16	144.64
March	173.50	187.28	152.74	201.13	165.49	114.62	139.82	105.56	145.88
April	178.79	187.00	155.29	211.38	165.86	115.96	139.73	105.32	147.76
May	161.62	186.60	154.19	203.40	166.59	116.91	139.75	106.71	147.38
June	154.77	186.98	155.96	206.59	167.59	119.35	141.80	106.44	149.10
July	164.47	186.27	154.69	211.21	167.68	120.55	141.44	108.41	149.72
August	168.63	188.70	156.91	218.13	168.05	119.52	140.74	108.16	150.90
September	180.04	191.86	160.09	222.26	168.96	118.61	141.76	106.67	152.45
October	185.90	197.87	160.70	220.44	171.19	119.23	142.49	110.35	153.48
November	194.33	200.65	161.38	223.88	172.78	118.68	143.65	110.84	153.86
December	172.06	200.57	158.41	199.25	174.77	121.15	148.20	113.04	151.80
1973P									
January	192.13	205.55	163.44	220.18	173.03	121.76	149.61	113.24	155.45
February	200.55	206.36	164.41	224.44	174.18	122.54	150.95	112.55	156.46
March	201.88	206.85	165.32	225.79	174.41	123.17	152.19	112.66	157.09
April	196.84	208.37	165.09	217.81	177.72	125.24	152.09	113.83	157.68
May	192.27	208.66	166.02	218.10	178.01	126.21	153.13	114.32	158.75
June	195.29	209.55	168.01	223.99	178.97	128.49	152.99	114.48	160.75
July	191.40	207.46	164.63	228.12	173.77	129.60	152.59	115.74	159.18
August	195.67	210.67	165.23	232.11	182.39	128.94	153.27	114.80	160.57
September	202.63	214.78	171.00	238.85	183.06	128.02	156.03	113.79	163.77
October	208.19	217.79	173.44	237.77	184.23	128.52	159.18	115.86	165.34
November	201.04	221.61	173.54	233.28	186.02	127.77	160.12	116.48	164.95
December	186.64	219.41	169.72	205.15	188.40	128.95	161.15	116.57	161.29

¹Mainly hotels, restaurants, laundries, dry-cleaning establishments and recreational and business services.

8.18 Annual average weekly hours and hourly earnings of hourly rated wage-earners in specified industries, 1967-72, and monthly averages 1972 and 1973

Year and month	All manufactures		Mining (incl. milling)		Construction	
	Average weekly hours	Average hourly earnings \$	Average weekly hours	Average hourly earnings \$	Average weekly hours	Average hourly earnings \$
Averages						
1967	40.3	2.40	41.9	2.84	41.3	3.12
1968	40.3	2.58	41.8	3.07	40.5	3.33
1969	40.0	2.79	41.4	3.28	39.8	3.71
1970	39.7	3.01	41.0	3.71	39.2	4.21
1971	39.7	3.28	40.4	4.04	39.2	4.75
1972P	40.0	3.54	40.3	4.34	40.1	5.15
1972P						
January	39.8	3.42	40.1	4.17	38.5	5.03
February	39.7	3.43	40.8	4.20	39.6	5.04
March	39.9	3.46	40.7	4.23	38.6	5.09
April	40.3	3.50	40.3	4.21	40.9	5.11
May	39.8	3.51	40.1	4.26	39.9	5.00
June	40.2	3.51	40.3	4.23	40.9	4.96
July	39.5	3.53	39.5	4.30	41.6	5.05
August	40.0	3.56	39.9	4.33	42.2	5.15
September	40.7	3.59	40.1	4.42	42.2	5.24
October	40.7	3.62	41.0	4.47	41.1	5.33
November	40.5	3.64	41.1	4.53	41.0	5.42
December	38.5	3.69	39.7	4.67	34.8	5.42
1973P						
January	40.0	3.71	41.2	4.64	39.3	5.52
February	40.2	3.72	41.2	4.67	39.9	5.60
March	40.2	3.76	40.9	4.71	40.0	5.61
April	39.6	3.79	40.6	4.77	38.0	5.65
May	39.9	3.82	40.8	4.78	38.5	5.59
June	39.9	3.85	40.9	4.78	39.8	5.60
July	38.7	3.85	40.3	4.77	40.9	5.58
August	39.2	3.83	40.6	4.84	41.2	5.65
September	40.0	3.93	40.8	4.91	41.7	5.78
October	40.0	3.98	41.0	4.95	41.0	5.84
November	40.0	3.97	41.5	5.01	39.3	5.95
December	38.0	4.04	40.5	5.03	33.8	5.86

8.19 Average weekly hours and hourly earnings of hourly rated wage-earners in specified industries and selected urban areas, 1970-72

Industry, province and urban area	Average weekly hours			Average hourly earnings (\$)		
	1970	1971	1972P	1970	1971	1972P
INDUSTRY						
Mining (incl. milling)	41.0	40.4	40.3	3.71	4.04	4.34
Metal mining	40.3	39.3	39.0	3.84	4.17	4.48
Coal mining	42.1	41.1	40.4	3.09	3.51	3.92
Manufacturing	39.7	39.7	40.0	3.01	3.28	3.54
Durable goods ¹	40.2	40.1	40.5	3.25	3.55	3.82
Non-durable goods ¹	39.3	39.2	39.4	2.77	3.02	3.25
Construction	39.2	39.2	40.1	4.21	4.75	5.15
Building	37.5	37.4	38.3	4.36	4.90	5.34
Engineering	43.1	43.1	43.9	3.92	4.44	4.83
Other						
Urban transit	42.0	41.9	42.1	3.65	4.02	4.28
Highway and bridge maintenance	37.2	36.7	35.8	2.70	2.94	3.13
Hotels, restaurants and taverns	31.0	31.5	31.5	1.75	1.95	2.08
Laundries, cleaners and pressers	37.0	36.8	36.6	1.74	1.91	2.03
PROVINCE						
Manufacturing						
Newfoundland	40.5	40.0	39.9	2.53	2.72	2.98
Nova Scotia	39.2	39.2	39.5	2.45	2.67	2.98
New Brunswick	40.5	40.1	40.1	2.47	2.71	2.92
Quebec	40.4	40.3	40.6	2.68	2.89	3.09
Ontario	39.8	39.8	40.2	3.18	3.47	3.74
Manitoba	38.9	38.5	38.7	2.72	2.92	3.15
Saskatchewan	39.5	39.2	38.7	3.16	3.45	3.68
Alberta	39.1	39.2	38.9	3.18	3.47	3.74
British Columbia	36.8	37.2	37.6	3.71	4.12	4.49
SELECTED URBAN AREA						
Manufacturing						
Montreal	39.9	39.9	40.1	2.73	2.93	3.14
Toronto	39.9	40.1	40.6	3.06	3.30	3.56
Hamilton	39.4	39.2	39.7	3.51	3.80	4.14
Windsor	41.8	40.8	42.2	3.87	4.30	4.71
Winnipeg	38.8	38.3	38.5	2.70	2.89	3.11
Vancouver	36.5	37.2	37.4	3.64	4.00	4.36

¹Durable goods manufacturing includes wood products, furniture and fixtures, primary metal industries, metal fabricating industries, machinery (except electrical), transportation equipment, electrical products and non-metallic mineral products; non-durable goods manufacturing includes all other manufacturing industries.

8.20 Employment in two major groups, by occupational group, employee type and sex, August 1972

Major group and occupational group	Employee type and sex								
	Full-time			Part-time			All employees		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Accommodation and food services	107,659	126,945	234,604	32,344	54,971	87,315	140,003	181,916	321,919
Managerial and administrative	12,364	4,353	16,717	692	582	1,274	13,056	4,935	17,991
Office supervisory and clerical	6,947	8,069	15,016	1,630	1,719	3,349	8,577	9,788	18,365
Beverage and food preparation and services	69,676	89,628	159,304	23,271	41,482	64,753	92,947	131,110	224,057
Other	18,672	24,895	43,567	6,751	11,188	17,939	25,423	36,083	61,506
Amusement and recreational services	30,569	14,116	44,685	21,044	13,888	34,932	51,613	28,004	79,617
Managerial and administrative	5,974	1,343	7,317	1,451	426	1,877	7,425	1,769	9,194
Office supervisory and clerical	3,026	3,657	6,683	1,661	1,664	3,325	4,687	5,321	10,008
Beverage and food preparation and services	3,377	4,051	7,428	2,785	4,828	7,613	6,162	8,879	15,041
Other	18,192	5,065	23,257	15,147	6,970	22,117	33,339	12,035	45,374

8.21 Average weekly earnings of employees in two major groups, by occupational group, employee type and sex, August 1972 (dollars)

Major group and occupational group	Employee type and sex								
	Full-time			Part-time			All employees		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Accommodation and food services	101.38	144.51	186.88	45.62	43.17	44.08	88.50	65.09	75.27
Managerial and administrative	156.93	121.84	147.79	73.85	61.93	68.40	152.53	114.77	142.17
Office supervisory and clerical	108.55	89.90	98.53	52.08	48.03	50.00	97.82	82.55	89.68
Beverage and food preparation and services	94.28	71.48	81.45	43.03	42.00	42.39	81.46	62.15	70.16
Other	88.45	72.51	79.34	49.92	45.80	47.35	78.22	64.22	70.01
Amusement and recreational services	117.10	88.38	108.03	63.83	50.90	58.69	95.38	69.79	86.38
Managerial and administrative	165.71	99.88	161.82	78.98	65.20	75.86	148.76	125.41	144.27
Office supervisory and clerical	123.49	76.59	110.57	56.87	51.31	54.09	99.88	84.70	91.81
Beverage and food preparation and services	99.31	76.56	86.92	57.44	43.29	48.46	80.39	58.48	67.46
Other	103.38	74.62	97.12	64.32	55.20	61.45	85.63	63.38	79.73

8.22 Wages and salaries, by industry and supplementary labour income, 1968-72, and by month 1972 and 1973^a (million dollars)

Year and month	Industry						
	Agriculture	Forestry	Mining	Manufacturing	Construction	Transportation, communication and other utilities	Trade
Annual							
1968	335	450	925	10,157	2,899	4,112	4,914
1969	344	492	975	11,088	3,243	4,493	5,550
1970p	368	491	1,155	11,592	3,437	4,883	6,055
1971p	388	525	1,234	12,426	3,924	5,341	6,562
1972p	396	563	1,276	13,656	4,147	5,892	7,404
1972p							
January	21.0	36.5	101.7	1,059.5	280.2	458.5	570.3
February	20.8	39.1	103.3	1,065.1	287.3	464.4	569.0
March	23.2	35.8	105.0	1,085.8	296.7	473.1	586.2
April	27.0	33.0	103.3	1,111.1	321.9	478.5	597.7
May	32.3	41.8	105.0	1,126.6	338.4	487.9	613.0
June	38.5	46.1	106.1	1,150.6	365.1	499.9	628.1
July	45.2	47.8	103.2	1,126.6	381.5	503.0	616.0
August	50.8	55.4	105.0	1,164.4	406.2	503.6	614.2
September	45.2	59.7	107.2	1,195.5	405.5	500.2	626.4
October	36.7	59.3	111.3	1,196.2	393.6	505.1	645.6
November	29.7	59.4	112.0	1,196.6	365.5	507.8	661.6
December	25.1	48.7	112.5	1,178.1	305.3	510.0	675.4
1973p							
January	22.2	50.6	113.6	1,192.1	299.5	499.3	648.1
February	22.0	51.6	114.9	1,211.3	305.5	504.8	649.6
March	24.5	49.9	116.5	1,230.7	312.8	510.9	662.1
April	28.5	45.1	111.7	1,241.6	332.8	548.1	681.2
May	34.2	56.9	117.1	1,268.0	365.5	553.1	692.9
June	40.7	67.1	121.1	1,311.4	385.9	560.8	710.1
July	47.5	68.4	121.3	1,281.9	403.7	557.4	701.4

8.22 Wages and salaries, by industry and supplementary labour income, 1968-72, and by month 1972 and 1973^a (million dollars) (concluded)

Year and month	Industry						
	Agriculture	Forestry	Mining	Manufacturing	Construction	Transportation, communication and other utilities	Trade
1973P (concluded)							
August	53.2	69.5	121.4	1,295.8	420.4	528.3	702.1
September	46.9	69.8	120.5	1,331.6	432.1	562.6	721.3
October	37.8	71.7	122.1	1,352.2	422.6	566.7	741.4
November	30.4	65.9	125.2	1,364.3	393.6	571.2	760.2
December	25.4	58.8	124.6	1,339.3	328.1	572.7	778.6
	Finance, insurance and real estate	Service		Public administration and defence ^a	Total wages and salaries ^a	Supplementary labour income	Total labour income
Annual							
1968	1,941	7,918		2,662	36,360	2,084	38,444
1969	2,207	9,221		3,106	40,765	2,300	43,065
1970P	2,385	10,374		3,413	44,204	2,538	46,743
1971P	2,589	11,589		3,915	48,544	2,788	51,332
1972P	2,881	12,909		4,499	53,678	3,171	56,849
1972P							
January	224.8	1,030.6		358.2	4,142.7	273.7	4,416.4
February	229.4	1,045.2		350.0	4,174.8	272.2	4,447.0
March	236.3	1,060.8		361.1	4,265.5	275.5	4,541.1
April	236.5	1,034.3		343.1	4,288.9	271.5	4,560.4
May	237.8	1,088.5		355.7	4,431.8	273.4	4,705.2
June	243.9	1,110.8		381.7	4,577.9	279.1	4,857.0
July	244.2	999.8		387.1	4,464.6	262.6	4,727.2
August	242.0	990.8		388.0	4,529.0	258.2	4,787.1
September	242.7	1,109.0		388.3	4,684.7	259.4	4,944.0
October	245.4	1,125.0		382.8	4,706.5	252.4	4,958.8
November	247.1	1,139.1		381.4	4,703.0	248.9	4,951.9
December	251.3	1,175.4		422.0	4,708.5	244.4	4,952.8
1973P							
January	252.7	1,148.3		393.1	4,621.2	311.3	4,932.4
February	257.6	1,208.2		399.1	4,726.2	312.0	5,038.1
March	262.3	1,174.1		415.5	4,763.0	315.0	5,078.0
April	264.8	1,177.8		410.1	4,845.5	312.6	5,158.1
May	267.7	1,191.7		430.4	4,983.3	315.7	5,298.9
June	271.3	1,207.4		443.6	5,127.7	321.6	5,449.2
July	273.2	1,091.9		446.0	5,003.7	304.8	5,308.5
August	274.7	1,078.0		456.7	5,011.2	295.4	5,306.6
September	279.8	1,228.5		439.8	5,240.9	297.8	5,538.8
October	285.7	1,243.0		435.6	5,286.1	289.1	5,575.2
November	287.9	1,261.0		433.9	5,296.7	285.9	5,582.5
December	292.1	1,248.9		438.3	5,212.9	277.8	5,490.7

^aTable based on the 1960 Standard Industrial Classification. Figures not adjusted for seasonality.

^aExcludes military pay and allowances.

^aIncludes fishing and trapping.

8.23 Index numbers of average wage rates for certain main industrial groups, 1968-72 (1961 = 100)

Year	Logging	Mining	Manufacturing			Construction	Transportation, communication and other utilities	Trade	Service	Local government	General index
			Durable goods	Non-durable goods	All manufacturing						
1968	162.5	138.9	139.7	141.4	140.6	154.0	143.4	144.5	141.8	146.7	143.8
1969	179.8	146.2	149.7	152.5	151.2	167.0	154.9	155.2	154.0	163.4	155.1
1970	192.8	159.4	162.3	163.2	162.9	195.5	166.2	166.1	166.4	183.3	167.8
1971	212.3	169.9	175.7	176.9	176.3	223.7	183.8	178.9	178.0	200.2	182.3
1972	226.1	190.1	190.1	191.5	190.8	239.9	196.6	195.7	191.7	217.2	197.4

8.24 Average wage and salary rates for selected occupations in certain cities across Canada, Oct. 1, 1972

Industry and occupation	Halifax, NS	Saint John, NB	Sherbrooke, Que.	Montreal, Que.	Toronto, Ont.	Hamilton, Ont.	Winnipeg, Man.	Regina, Sask.	Saskatoon, Sask.	Calgary, Alta.	Edmonton, Alta.	Vancouver, BC
	\$ an hr	\$ an hr	\$ an hr	\$ an hr	\$ an hr	\$ an hr	\$ an hr	\$ an hr	\$ an hr	\$ an hr	\$ an hr	\$ an hr
CONSTRUCTION (building and structures only)												
Bricklayer and mason	5.50	5.05	5.19	5.51	7.05	7.59	5.55	5.15	5.15	5.80	5.80	6.46
Bulldozer operator	4.50	4.82	4.82	5.07	6.95	7.33	4.55	4.80	4.80	5.70	5.70	6.37
Carpenter	4.65	4.65	4.96	5.29	6.98	7.09	4.40	4.94	4.94	5.65	5.65	6.28
Cement finisher	4.68	4.67	4.86	5.04	6.12	6.00	4.60	4.60	4.60	5.30	5.30	6.23
Cement operator	4.80	5.03	5.03	5.40	7.55	7.93	5.10	4.75	4.75	6.35	6.35	7.46
Electrician	5.41	5.60	5.60	5.73	7.80	7.96	5.80	5.72	5.92	6.65	6.65	7.46
Laborer	3.90	3.65	4.38	4.38	5.20	5.45	4.15	3.74	3.74	4.55	4.55	5.24
Marble and tile setter	4.67	5.05	4.98	5.51	6.25	5.80	5.15	4.60	4.60	5.65	5.65	6.36
Painter (brush)	4.05	4.15	4.86	5.17	6.15	6.00	4.90	4.08	4.16	5.40	5.40	6.35
Plasterer	4.68	5.05	5.19	5.51	6.50	6.68	5.30	5.30	5.30	6.20	6.20	6.80
Plumber	5.26	5.05	5.03	5.73	7.49	7.85	6.05	5.72	5.72	6.55	6.55	7.27
Sheet metal worker	5.26	5.25	5.03	5.50	6.98	7.70	5.40	5.75	5.55	6.40	6.50	6.83
MANUFACTURING AND OTHER INDUSTRIES¹												
General labourer, male	2.80	2.89	2.68	2.97	3.18	3.52	3.07	3.04	3.06	3.39	3.51	3.71
Maintenance trades												
Carpenter	4.03	3.54	3.46	3.94	4.32	4.52	4.09	4.06	3.89	4.68	4.56	4.90
Electrician	4.18	4.41	3.89	4.30	4.69	5.09	4.48	4.64	4.40	4.98	4.79	5.33
Machinist	4.10	3.71	3.76	4.24	4.48	5.07	4.25	4.55	4.24	4.76	4.74	4.92
Mechanic	3.58	4.00	3.13	4.05	4.21	4.43	3.90	3.87	4.12	4.25	3.93	4.83
Millwright	4.37	4.35	4.09	4.09	4.69	4.89	4.32	4.58	4.28	4.78	4.86	5.26
Pipefitter	4.42	4.58	3.91	4.59	4.61	4.84	4.46	4.20	4.51	4.48	4.84	5.15
Tool and die maker												
Welder	3.83	3.67	3.52	3.96	4.12	4.58	4.12	4.20	3.99	4.29	4.50	5.13
Service occupations												
Truck driver, light and heavy	3.00	2.94	3.12	3.47	3.73	3.83	3.20	3.18	3.26	3.72	3.60	4.46
Trucker, power	2.87	3.34	3.06	3.52	3.71	3.98	3.29	3.45	3.40	3.55	3.62	4.63
OFFICE OCCUPATIONS, MALE												
Bookkeeper, senior	144	128	137	157	168	163	153	152	139	171	164	176
Clerk, intermediate	124	154	119	125	129	187	127	145	149	135	128	137
Clerk, senior	134	113	121	129	147	186	119	125	137	131	130	153
Clerk, order	145	173	137	158	169	173	151	149	146	155	154	176
Draughtsman, intermediate	183	214	187	194	205	210	193	177	188	195	183	205
OFFICE OCCUPATIONS, FEMALE												
Clerk, intermediate	106	105	102	110	113	110	103	104	108	106	107	119
Machine operator												
Bookkeeping	84	77	86	91	102	100	89	89	89	93	93	103
Calculating	84	85	83	96	101	99	92	104	98	97	97	109
Secretary, senior	120	110	106	129	134	133	125	122	128	130	122	133
Stenographer, junior	95	92	90	97	106	110	94	94	92	100	95	105
Stenographer, senior	109	103	100	114	119	125	112	106	106	111	112	118
Switchboard operator and receptionist	84	81	84	94	100	98	88	86	86	93	92	101
Typist, junior	80	74	80	82	90	95	82	81	81	87	85	92
Typist, senior	97	86	97	100	105	109	97	95	91	100	99	104

¹ "Other industries" consists of logging; mining; transportation (all sectors including air transport), storage and communication (including radio and TV); public utilities; trade; finance; and government and personal service.

8.25 Summary of selected working conditions of non-office and office employees in manufacturing and all industries, 1970-72

Item	1970		1971		1972	
	Manu- facturing industries	All industries	Manu- facturing industries	All industries	Manu- facturing industries	All industries
Coverage						
NON-OFFICE EMPLOYEES						
Reporting establishments	No. 8,817	22,177	8,446	21,297	7,795	26,790
Employees	909,181	2,209,311	905,948	2,297,314	873,174	2,270,818
OFFICE EMPLOYEES						
Reporting establishments	No. 8,786	23,806	8,278	22,715	7,689	21,073
Employees	305,716	1,120,404	272,894	1,132,915	264,231	1,136,643
Percentage of non-office employees						
STANDARD WEEKLY HOURS						
40 and under	84	82	82	83	84	83
Over 40 and under 44	5	4	5	3	5	4
44	1	2	2	2	2	2
45	5	5	4	4	5	4
Over 45 and under 48	5 ¹	7 ¹	4 ¹	5 ¹	3 ¹	4 ¹
48	..	..	..	..	..	..
Over 48	..	..	..	..	..	..
Employees on a five-day week	95	91	95	90	95	91
VACATIONS WITH PAY						
Two weeks	96	93	97	90	98	88
After: 1 year or less	70	75	77	78	82	79
2 years	13	10	16	10	15	9
3 years	11	7	3	2	1	..
4-5 years	1	1	1	1	..	..
Other periods	1	1	..	..	..	..
Three weeks	84	83	86	84	87	86
After: Less than 10 years	53	57	63	69	68	74
10 years	20	17	17	11	15	9
11-14 years	..	..	..	..	..	..
15 years	4	4	4	3	3	2
Over 15 years	7 ²	6 ²	3 ²	2 ²	1 ²	1 ²
Four weeks	69	69	71	72	71	74
After: Less than 25 years	46	42	66	69	68	72
25 years	5	8	3	2	3	2
More than 25 years and/or other provisions	17	17	..	..	..	..
Paid statutory holidays	97	95	98	96	98	97
6 or less	4	4	4	3	3	3
7	4	4	3	4	4	4
8	17	14	15	12	13	10
9	39	34	37	33	36	27
More than 9	31	37	38	44	42	53
Percentage of office employees						
STANDARD WEEKLY HOURS						
Under 37½	26	36	29	37	28	37
37½	43	44	42	43	42	45
Over 37½ and under 40	4	2	4	2	4	2
40	24	16	23	16	24	16
Over 40	2	2	2	2	2	1
Employees on a five-day week	99	98	99	98	98	99
VACATIONS WITH PAY						
Two weeks	97	95	97	92	99	81
After: 1 year or less	90	91	91	89	94	79
2 years	4	3	5	2	5	2
3 years	2	1	1	..	..	..
5 years	..	..	..	..	..	..
Other periods	1	..	..	..	..	..
Three weeks	93	94	94	95	94	96
After: Less than 10 years	61	72	71	84	43	86
10 years	24	15	18	10	32	8
11-14 years	..	..	..	..	..	..
15 years	3	4	3	2	15	1
Over 15 years	5 ²	3 ²	2 ²	1 ²	2 ²	1 ²
Four weeks	81	84	82	86	83	87
After: Less than 25 years	58	48	78	82	80	84
25 years	5	9	3	3	3	3
More than 25 years and/or other provisions	19	28	..	..	..	..
Paid statutory holidays	99	99	100	100	100	100
1-6	1	1	1	1	1	1
7	2	2	2	2	2	2
8	15	10	13	9	11	7
9	39	33	35	33	34	30
More than 9	39	51	48	55	52	60

¹Standard weekly hours over 45.

²Three weeks vacation after 11-14 years, or over 15 years.

8.26 Trusted pension funds, income, expenditures and assets, 1970-72

Item	1970	1971	1972
TRUST ARRANGEMENTS	<i>No.</i>	<i>No.</i>	<i>No.</i>
(a) Corporate trustees	2,856	2,966	2,857
(b) Individual trustees	912	888	814
(c) Combinations of (a) and (b)	61	64	79
(d) Pension fund societies	30	28	28
Total trusted funds	3,859	3,946	3,778
INCOME	<i>\$'000,000</i>	<i>\$'000,000</i>	<i>\$'000,000</i>
Total contributions	1,054	1,260	1,469
Employer	658	798	944
Employee	396	462	525
Investment income	546	631	735
Net profit on sale of securities	15	34	117
Other	10	21	19
Total income	1,625	1,946	2,340
EXPENDITURES			
Pension payments out of funds	377	482	557
Cost of pension purchased	16	21	17
Cash withdrawals	110	115	160
Administration costs	12	15	18
Net loss on sale of securities	99	60	38
Other expenditures	15	57	13
Total expenditures	629	750	803
ASSETS (book value)			
Investment in pooled funds	797	894	929
Investment in mutual funds	55	51	104
Bonds	5,766	6,386	6,982
Bonds of or guaranteed by Government of Canada	471	424	393
Bonds of or guaranteed by provincial governments	2,967	3,324	3,707
Bonds of Canadian municipal governments, school boards, etc.	761	749	736
Other Canadian	1,555	1,878	2,132
Non-Canadian	12	11	14
Stocks	2,680	3,214	3,901
Canadian, common	2,018	2,531	3,200
Canadian, preferred	72	79	92
Non-Canadian, common	580	596	603
Non-Canadian, preferred	10	8	6
Mortgages	1,022	1,170	1,296
Insured residential (NHA)	522	641	760
Conventional	500	529	536
Real estate and lease-backs	48	47	46
Miscellaneous			
Cash on hand and in chartered banks	136	136	163
Guaranteed investment certificates	110	96	95
Short-term investments	277	247	261
Accrued interest and dividends receivable	90	104	125
Accounts receivable	75	113	145
Other assets	3	3	3
Total assets	11,059	12,461	14,050

8.27 Unemployment insurance statistics, 1969-73, and by month 1972 and 1973

Year, month and end of period	Activity				
	Insured population ¹ '000	Claims data ('000)		Benefits data	
		Claimants for UIC benefits (end of period) ^{1,2}	Initial and renewal claims received	Number of weeks '000	Average weekly payment \$
1969	5,367	410	1,855	15,735	31.71
1970	5,426	540	2,261	19,817	35.08
1971	5,439	604	2,371	22,634	39.44
1972	7,845	804	2,470	30,462	61.79
1973	8,264	828	2,238	29,537	68.45
1972					
January	7,608	827	280	2,376	59.09
February	7,590	912	203	3,140	61.69
March	7,684	914	182	3,258	61.69
April	7,647	874	175	2,838	61.71
May	7,807	814	175	3,033	61.53
June	7,977	753	182	2,291	60.83
July	8,195	762	194	2,109	60.70
August	8,156	722	165	2,377	60.88
September	7,762	692	173	2,085	61.93
October	7,841	709	199	2,205	62.99
November	7,914	765	266	2,284	63.46
December	7,955	903	275	2,466	64.99

8.27 Unemployment insurance statistics, 1969-73, and by month 1972 and 1973 (concluded)

Year, month and end of period	Activity					
	Insured population ¹ '000	Claims data ('000)		Benefits data		
		Claimants for UIC benefits (end of period) ^{1,2}	Initial and renewal claims received	Number of weeks '000	Average weekly payment \$	
1973						
January	7,926	1,056	270	3,634	67.68	
February	7,999	1,055	155	3,268	68.49	
March	8,031	1,003	158	3,148	68.67	
April	8,081	921	150	2,954	68.56	
May	8,239	810	157	2,664	67.70	
June	8,492	739	154	2,033	67.38	
July	8,584	733	179	2,138	68.33	
August	8,596	691	161	2,015	67.37	
September	8,203	676	161	1,812	68.03	
October	8,330	677	191	1,953	69.76	
November	8,343	744	247	1,916	68.99	
December	8,343	835	256	2,002	71.19	
Benefits data (concluded)						
Benefits paid (\$'000)						
	Regular	Sickness	Maternity	Retirement	Fishing	Total ³
1969	--	--	--	--	--	498,992
1970	--	--	--	--	--	695,222
1971	--	--	--	--	--	890,594
1972	1,764,031	58,854	36,431	2,440	20,403	1,871,802
1973	1,850,930	80,179	66,750	3,691	20,297	2,004,212
1972						
January	131,661	2,523	1,886	216	4,088	139,930
February	180,801	4,215	2,363	205	6,090	193,168
March	186,771	6,142	2,835	183	5,039	200,093
April	164,184	5,481	2,436	118	2,909	174,291
May	176,775	5,715	2,730	117	1,303	185,702
June	131,120	5,293	2,656	161	162	138,258
July	120,962	4,482	2,334	215	39	127,154
August	136,979	4,624	2,885	227	34	143,807
September	121,516	4,210	3,127	239	24	128,138
October	129,357	5,193	4,026	258	28	138,064
November	134,400	5,516	4,689	265	47	143,763
December	149,504	5,461	4,464	236	641	159,434
1973						
January	227,883	6,521	5,289	378	5,875	244,437
February	206,339	6,769	5,049	264	5,366	222,661
March	198,759	7,474	5,294	273	4,381	214,337
April	187,774	6,572	5,177	272	2,716	201,120
May	166,577	6,849	5,588	307	1,030	178,793
June	124,993	6,331	5,279	274	82	135,588
July	133,328	6,493	5,907	356	41	145,079
August	123,141	6,479	5,740	336	33	134,579
September	110,962	6,458	5,513	338	22	122,083
October	122,360	6,974	6,503	338	29	135,223
November	118,345	7,188	6,319	319	32	128,674
December	130,467	6,071	5,092	235	689	141,637

¹Annual figures are annual averages.²Persons who have applied for or are in receipt of unemployment insurance benefits at end of month.³Figures are adjusted for cancellation of warrants and collection of overpayments; prior to July 1971, total includes ordinary, seasonal and fishing benefits.**8.28 Fatal employment injuries¹, by industry, 1970-72**

Industry	Number			Percentage of total		
	1970	1971	1972	1970	1971	1972
Agriculture	16	21	30	1.5	1.9	2.5
Forestry	94	93	76	9.0	8.3	6.2
Fishing and trapping	25	11	10	2.4	1.0	0.8
Mining, quarrying and oil wells	150	162	171	14.3	14.5	14.1
Manufacturing	182	181	247	17.4	16.2	20.3
Construction	194	225	208	18.5	20.2	17.1
Transportation, communication and other utilities	187	203	225	17.8	18.2	18.5
Trade	62	79	70	5.9	7.1	5.8
Finance, insurance and real estate	3	4	6	0.3	0.3	0.5
Service	55	70	109	5.3	6.3	9.0
Public administration	80	67	63	7.6	6.0	5.2
Total	1,048	1,116	1,215	100.0	100.0	100.0

¹The Canada Department of Labour compiles statistics of all fatal industrial accidents; Workmen's Compensation Board statistics (Table 8.29) include only those accidents covered by legislation.

8.29 Compensation claims for employment injuries and payments made, 1971 and 1972

Year and province	Compensation claims				Total	Workmen's Compensation Board payments ² \$
	Medical aid only ¹	Temporary disability	Permanent disability	Fatal injury		
1971P						
Newfoundland	5,941	5,234	143	19	11,337	4,678,497
Prince Edward Island	996	1,254	20	3	2,273	654,892
Nova Scotia	14,029	11,800	674	26	26,529	11,539,890
New Brunswick	15,699	8,708	319	30	24,756	6,526,568
Quebec ³	112,069	70,051	7,081	254	189,455	72,203,103
Ontario ³	231,103	130,434	4,932	361	366,830	136,798,771
Manitoba	15,421	13,903	541	33	29,898	9,212,549
Saskatchewan	12,210	9,974	265	34	22,483	8,714,085
Alberta	35,231	26,556	1,128	100	63,015	22,502,830
British Columbia	58,108	30,368	1,428	172	90,076	41,606,788
Total, 1971P	500,807	308,282	16,531	1,032	826,652	314,437,973
1972P						
Newfoundland	7,200	6,414	182	50	13,846	3,345,019
Prince Edward Island	1,006	1,150	6	1	2,163	830,087
Nova Scotia	12,622	11,681	661	32	24,996	12,809,706
New Brunswick	14,963	8,634	365	49	24,011	7,331,339
Quebec ³	106,033	74,635	7,478	227	188,373	83,194,001
Ontario ³	237,247	133,901	5,063	371	376,582	156,902,395
Manitoba	14,289	16,085	433	37	30,844	11,211,758
Saskatchewan	14,788	11,704	402	49	26,943	10,409,332
Alberta	37,742	26,416	1,362	104	65,624	27,669,929
British Columbia	55,636	39,291	1,411	179	96,517	45,326,075
Total, 1972P	501,526	329,911	17,363	1,099	849,899	359,029,641

¹Injuries requiring medical treatment but not causing disability for a sufficient period to qualify for compensation; the period varies among provinces.

²Includes, except where noted otherwise, payments to compensate loss of earnings, medical aid payments, cost of rehabilitation and hospitalization (not including capital expenditures) and pensions paid (not pensions awarded) for temporary and permanent disabilities; the Quebec compensation figure includes pensions awarded as well as pensions paid.

³Distribution partly estimated.

8.30 Union membership in Canada, 1952-72 (thousands)

Year	Members	Year	Members	Year	Members
1952	1,146	1959	1,459	1966	1,736
1953	1,220	1960	1,459	1967	1,921
1954	1,268	1961	1,447	1968	2,010
1955	1,268	1962	1,423	1969	2,075
1956	1,352	1963	1,449	1970	2,173
1957	1,386	1964	1,493	1971	2,211
1958	1,454	1965	1,589	1972	2,371

8.31 Union membership, by type of union and affiliation, as at January 1972

Type and affiliation	Unions No.	Locals No.	Membership	
			No.	%
International unions	99	4,914	1,411,852	59.6
AFL-CIO/CLC	84	4,463	1,195,398	50.5
CLC only	4	146	115,671	4.9
AFL-CIO only	5	8	619	¹
Unaffiliated unions	6	297	100,164	4.2
National unions	68	5,278	892,691	37.7
CLC	19	2,862	401,098	16.9
CNTU	12	1,135	218,526	9.2
CCU	4	27	10,511	0.5
Unaffiliated unions	33	1,254	262,556	11.1
Directly chartered local unions	129	129	12,885	0.5
CLC	128	128	12,790	0.5
CNTU	1	1	95	¹
Independent local organizations	141	141	53,213	2.2
Total	437	10,462	2,370,641	100.0

¹Less than 0.1%.

8.32 Employees covered by all collective agreements¹ for negotiating units covering 500 or more employees in all industries other than construction, as at Dec. 31, 1972 and 1973

Region or province	Manufacturing industries			Non-manufacturing industries except construction	All industries except construction
	Durable goods	Non-durable goods	Total manufacturing		
1972P					
Atlantic	6,350	6,750	13,100	62,280	75,380
Newfoundland	—	3,400	3,400	7,750	11,150
Prince Edward Island	—	—	—	1,600	1,600
Nova Scotia	5,750	1,700	7,450	25,280	32,730
New Brunswick	600	1,650	2,250	27,650	29,900
Quebec	43,460	71,920	115,380	314,055	429,435
Ontario	116,645	55,515	172,160	181,775	353,935
Prairies	3,095	3,100	6,195	136,050	142,245
Manitoba	2,045	1,700	3,745	36,415	40,160
Saskatchewan	—	—	—	33,540	33,540
Alberta	1,050	1,400	2,450	66,095	68,545
British Columbia	49,135	16,740	65,875	86,090	151,965
Other ²	36,540	35,435	71,975	364,710	436,685
Canada	255,225	189,460	444,685	1,144,960	1,589,645
1973P					
Atlantic	7,270	9,010	16,280	83,375	99,655
Newfoundland	—	3,100	3,100	21,390	24,490
Prince Edward Island	—	—	—	3,900	3,900
Nova Scotia	6,670	4,360	11,030	30,125	41,155
New Brunswick	600	1,550	2,150	27,960	30,110
Quebec	41,305	69,345	110,650	316,770	427,420
Ontario	122,190	55,175	177,365	185,315	362,680
Prairies	3,600	3,000	6,600	154,310	160,910
Manitoba	2,025	1,700	3,725	39,650	43,375
Saskatchewan	550	—	550	38,490	39,040
Alberta	1,025	1,300	2,325	76,170	78,495
British Columbia	49,745	13,905	63,650	87,530	151,180
Other ²	34,100	19,065	53,165	283,665	336,830
Canada	258,210	169,500	427,710	1,110,965	1,538,675

¹All agreements in force, irrespective of the year of settlement. There were 752 agreements covering 1.6 million employees as at Dec. 31, 1972 and 800 covering 1.5 million as at Dec. 31, 1973.

²Agreements pertaining to workers located in more than one province and in the Yukon Territory and Northwest Territories.

8.33 Year-over-year percentage and cents-per-hour increases in base rates under major collective agreement, by month, 1972 and 1973

Month	Collective agreement ¹					
	Manufacturing		Non-durable goods		Total manufacturing	
	Durable goods		Non-durable goods		Total manufacturing	
	%	¢	%	¢	%	¢
1972P						
January	7.6	23.5	8.1	22.0	7.9	22.9
February	7.5	23.0	7.3	20.0	7.5	22.0
March	7.2	22.6	7.2	19.7	7.3	21.5
April	7.3	22.8	7.3	20.1	7.4	21.7
May	7.3	22.8	6.4	18.1	6.9	20.7
June	6.1	19.5	6.7	19.0	6.4	19.2
July	6.2	20.0	6.1	17.6	6.2	18.8
August	6.9	22.2	7.3	21.0	7.0	21.3
September	6.9	22.2	7.6	21.8	7.1	21.6
October	6.7	21.8	7.9	22.7	7.1	21.8
November	6.6	21.8	8.2	23.7	7.2	22.2
December	6.4	21.2	8.2	23.8	7.1	22.0
1973P						
January	7.5	25.0	8.3	24.1	7.8	24.6
February	7.5	24.9	8.4	24.5	7.8	24.6
March	7.2	24.1	8.4	24.4	7.7	24.2
April	7.2	24.2	8.3	24.4	7.6	24.2
May	7.7	26.1	7.8	23.1	7.8	24.8
June	9.0	30.5	7.5	22.5	8.5	27.2
July	7.8	27.1	8.0	24.1	7.9	25.8
August	7.4	25.7	6.8	20.7	7.2	23.6
September	8.1	28.5	6.9	21.3	7.7	25.6
October	8.1	28.7	7.5	23.0	7.9	26.4
November	7.1	25.3	7.8	24.2	7.4	24.9
December	8.5	30.3	8.0	24.9	8.4	28.2
	Commercial industries except construction		Non-commercial industries ²		All industries except construction	
	%	¢	%	¢	%	¢
1972P						
January	8.6	24.2	7.2	19.0	8.1	22.5
February	8.4	23.8	6.5	17.2	7.7	21.5
March	8.5	24.2	6.7	17.7	7.7	21.8
April	8.2	23.6	6.7	18.0	7.6	21.5
May	7.0	20.3	6.7	18.0	6.8	19.5
June	6.2	18.4	6.1	16.5	6.1	17.7

8.33 Year-over-year percentage and cents-per-hour increases in base rates under major collective agreement, by month, 1972 and 1973 (concluded)

Month	Collective agreement ¹					
	Commercial industries except construction		Non-commercial industries ²		All industries except construction	
	%	¢	%	¢	%	¢
1972P (concluded)						
July	6.3	18.7	5.8	15.8	6.0	17.6
August	6.6	19.8	5.8	15.7	6.2	18.2
September	7.0	20.9	5.8	15.8	6.5	19.0
October	7.1	21.3	7.4	20.5	7.2	21.3
November	7.3	22.0	7.1	19.7	7.2	21.3
December	7.2	21.8	8.6	24.0	7.7	23.0
1973P						
January	7.1	22.2	9.4	29.1	8.1	25.2
February	7.2	22.5	9.3	28.7	8.0	25.1
March	7.5	23.4	9.3	28.9	8.2	25.6
April	7.7	24.2	9.0	28.1	8.1	25.7
May	8.0	25.2	9.0	28.2	8.3	26.2
June	8.6	27.4	8.3	26.3	8.4	26.6
July	8.4	26.9	10.4	32.8	9.1	29.3
August	8.2	26.6	10.6	33.5	9.1	29.4
September	8.1	26.6	10.1	32.4	8.9	28.9
October	8.5	27.8	8.3	27.2	8.3	27.2
November	8.4	27.7	8.0	26.3	8.1	26.7
December	9.3	30.9	6.7	22.4	8.0	26.7

¹Based on all major collective agreements covering 500 or more employees in force except those in the construction industry. Data refer to rates actually paid in the month specified; no adjustments have been made for retroactive wage increases.

²This category consists of public administration and defence; education and related institutions; hospitals; welfare organizations; religious organizations; private households; miscellaneous services; highway and bridge maintenance; water system and other utilities.

8.34 Strikes and lockouts, by industry, 1972 with totals for 1968-72

Industry	Strikes and lockouts beginning during year	Strikes and lockouts in existence during year		
		Strikes and lockouts	Workers involved	Duration in man-days
Agriculture	—	—	—	—
Forestry	11	12	6,004	120,330
Fishing and trapping	—	—	—	—
Mines	30	32	13,410	334,680
Metal	19	21	11,273	313,710
Mineral fuels	1	1	225	450
Non-metal	7	7	1,704	14,480
Quarries	3	3	208	6,040
Incidental services	—	—	—	—
Manufacturing	263	290	117,699	2,042,500
Food and beverages	35	39	7,392	259,720
Tobacco products	1	1	280	21,280
Rubber	4	4	1,245	2,650
Leather	3	3	364	3,530
Textiles	6	7	2,725	33,860
Knitting mills	3	3	500	6,280
Clothing	1	1	18	90
Wood	29	30	50,071	585,110
Furniture and fixtures	3	3	2,625	43,880
Paper	12	15	3,764	26,500
Printing and publishing	8	12	917	31,480
Primary metals	21	21	12,090	156,340
Metal fabricating	41	49	5,394	153,250
Machinery	20	21	5,912	142,200
Transportation equipment	28	30	12,229	286,960
Electrical products	17	17	8,129	115,650
Non-metallic mineral products	11	12	1,793	91,630
Petroleum and coal products	1	1	60	420
Chemical products	13	13	1,515	54,620
Miscellaneous	6	8	676	27,050
Construction	81	82	50,649	1,420,460
Transportation and utilities	59	59	54,151	1,351,130
Transportation	37	37	19,806	306,950
Storage	—	—	—	—
Communication	11	11	3,530	66,750
Power, gas and water	11	11	30,815	977,430
Trade	40	47	4,104	55,060
Finance	2	2	231	1,770
Financial institutions	1	1	7	430
Insurance and real estate	1	1	224	1,340
Service	31	35	7,659	83,420
Education	12	12	4,633	17,880
Health and welfare	10	12	2,292	40,160
Religious organizations	—	—	—	—
Recreational services	1	1	10	600
Services to business	2	2	152	3,280
Personal services	2	3	123	3,480
Miscellaneous services	4	5	449	18,020

8.34 Strikes and lockouts, by industry, 1972 with totals for 1968-72 (concluded)

Industry	Strikes and lockouts beginning during year	Strikes and lockouts in existence during year		
		Strikes and lockouts	Workers involved	Duration in man-days
Public administration	39	39	452,567	2,344,180
Federal administration	1	1	100	100
Provincial administration	9	9	423,378	1,893,980
Local administration	29	29	29,089	450,100
Other government offices	—	—	—	—
Total	1972	556	706,474	7,753,530
	1971	547	239,631	2,866,590
	1970	503	261,706	6,539,560
	1969	566	306,799	7,751,880
	1968	559	223,562	5,082,732

Sources

8.1 - 8.4 Labour Force Survey Division, Household Statistics Branch, Statistics Canada.

8.5 - 8.11 Census Characteristics Division, Census Field, Statistics Canada.

8.12 - 8.22 Labour Division, General Statistics Branch, Statistics Canada.

8.23 - 8.25 Public Relations Branch, Canada Department of Labour.

8.26 - 8.27 Labour Division, General Statistics Branch, Statistics Canada.

8.28 - 8.34 Public Relations Branch, Canada Department of Labour.

Chapter 9

Scientific research

The increasing public realization that the effects of science and technology can be harmful as well as beneficial has created demands that science policy planning be integrated into general government planning to ensure compatibility with national goals and priorities. In Canada this has been reflected in the activities of the Senate Special Committee on Science and was a major factor in the establishment of the Ministry of State for Science and Technology to assist and inform the government on science policy matters.

Federal policies and decisions have a significant impact on the progress of science in Canada. The federal government is the principal funder of research and development in Canada and second only to Canadian industry as a performer. In 1973-74 more than \$1.4 billion, 6% of the total federal budget, was devoted to scientific activities.

Statistics Canada has collected data on the resources devoted to natural science activities by the federal government since 1959. The range and detail of information gathered has expanded substantially over the years in response to the increasing demand for policy and planning data. In 1970 a survey of federal government human science activities was begun. At the same time considerable effort has been expended to maintain the continuity and compatibility of the resulting data series to permit analysis and study of the impact of scientific activities.

9.1 Federal science policy

Responsibility for federal policy on science resides in the Cabinet. To exercise this authority a Cabinet committee known as the Committee of the Privy Council on Scientific and Industrial Research was established in the National Research Council Act. The Committee was chaired by the Minister designated in the National Research Council Act as responsible for that Council and its members were Ministers of other departments with significant science programs. The National Research Council for many years was responsible for advising the Committee on science policy, complemented after 1949 by a panel of senior officials from the science-based departments and agencies.

A Science Secretariat was created in the Privy Council Office in 1964, as a result of a recommendation of the Royal Commission on Government Organization. This Secretariat worked with the Cabinet Secretariat as part of the internal government structure to provide an accurate and comprehensive background to science policy decisions. Its responsibilities included monitoring new program submissions, initiating and formulating new policies and program thrusts and co-ordinating government participation in national and international science and technology activities. Later, in 1967, the Science Secretariat was given the responsibility of nominating Counsellors (Scientific) for certain embassies and missions abroad in consultation with the Department of External Affairs.

In 1966, the federal government established the Science Council of Canada, a Crown corporation charged with independently assessing Canada's scientific and technological resources, requirements and potential, and making recommendations thereon. The Science Council is concerned both with research and development and with the use of science and technology in the solution of Canada's social and economic problems. It draws its membership from industry, the universities and government and its views are independent of those of the internal government structure.

The Council has published several reports based on commissioned studies from consultants on different areas of science and has also published its own reports making recommendations on these subjects. Some of the topics include upper atmosphere and space; the proposal for an intensive neutron generator; water resources research; university research and the federal government; scientific and technical information dissemination; earth and marine sciences; research in fisheries, wildlife, forestry resources and agriculture; a Canadian STOL (short take-off and landing) air transport system; a communications network for computers; urban development; pollution problems; policies for basic biology and basic research; and policy issues in development of primary and secondary industries. In addition, the Council recommended that Canada focus its scientific and technological effort through the creation of "major programs" designed to help solve some of the country's

social and economic problems. These programs include a space program for Canada, water resources management and development, transportation, urban development, computer applications and scientific and technological aid to developing areas of the world.

In 1967, a Special Senate Committee on Science Policy was formed to consider and report on the scientific policy of the federal government and to appraise its priorities, organization, budget and efficiency. The first volume of its report, published in December 1970, describes what the Committee considered to be major deficiencies in the policy and the second, published in January 1972, contains specific recommendations on targets and strategies for the 1970s. The final volume recommended specific changes in the federal structures concerned with science and technology.

The Ministry of State for Science and Technology is responsible for developing and formulating policies for the optimum development and application of science and technology in Canada; reviewing and assessing scientific and technological activities and programs within the federal government; and strengthening co-operation among the federal government and the provinces, public and private organizations and with other nations. The Ministry has three branches: Policy, Program Review and Assessment, and Co-operation.

The Policy Branch is concerned with the development and recommendation of objectives and priorities for science and technology, the development and formulation of related policies, the provision of advice and counsel on the scientific and technological implications of government policies or proposals, and the assessment of the impact of science and technology on Canadian society.

The Program Review and Assessment Branch is responsible for the formulation of science expenditure guidelines; the provision of systematic advice and support to departments and agencies in the development of their budgetary proposals relating to science and technology; and the review of these proposals in conjunction with the Treasury Board. The Branch develops and promotes improved methods of evaluating the effectiveness of scientific and technological policies, programs and management techniques and, later, will analyze federal expenditures on science and technology.

The Co-operation Branch produces correlated data on Canada's scientific and technological resources and activities; facilitates the exchange of information on domestic and international policies, programs and activities; and develops the policies and co-ordinating mechanisms necessary to ensure that Canada obtains maximum benefits from participation in related international organizations and activities.

The Make-or-Buy policy, introduced in 1972, provides that, where possible, all new research and development requirements of the federal government will be contracted out to industry rather than be carried out in government laboratories. The policy is intended to ensure that R&D results are translated more effectively into additional Canadian industrial capacity. As an adjunct to this policy, provision has been made for the funding of unsolicited research proposals from outside the government.

In July 1973, a new policy was introduced for the development and control of off-shore resources. This policy is designed to encourage participation by Canadian industry to ensure Canadian control of these resources. Special emphasis will be given to a wide range of marine science and technology programs. The Oceans policy, now being implemented, will develop the capability to operate on or below ice-covered waters to assist in the development of off-shore resources.

9.2 Federal activities in the natural sciences

Activities in the natural sciences involve the accumulation of knowledge of physical and natural phenomena and the practical application of such knowledge. This includes the life (biological and medical), physical, environmental, mathematical and engineering sciences.

9.2.1 Expenditures

In the fiscal year 1973-74 expenditures by the federal government for scientific activities in the natural sciences exceeded \$1 billion (see Table 9.1). Science expenditures have more than tripled since 1965; current expenditures increased at an average annual rate of 13% with the most rapid growth occurring in the first four years of the period. However, the real growth of scientific activities is probably less than indicated as expenditure data are in current dollars

and do not reflect the effect of cost and price increases. It is difficult to determine how much of the apparent increase is attributable to these factors and, since there is as yet no measure of research output, it is not possible to determine how much increased costs are balanced by increased output.

Scientific expenditures represented 5% of the total 1973-74 federal budgetary estimates, a proportion that has remained almost constant since 1970. Scientific expenditures were reported by 27 departments covering 43 budgetary programs; 10 of these departments each spent more than \$30 million on scientific activities in 1973-74 (Table 9.2).

Research and development (R&D) accounted for 72% of the total current expenditures in 1973-74 (Table 9.1). This represents a decrease; during the years from 1964-65 through 1972-73 R&D represented an average 75% of the current expenditures. On the other hand, expenditures for scientific information increased; in 1973-74 they represented \$75 million, or 8% of current expenditures, while in 1970-71 they accounted for 5%.

The Department of Industry, Trade and Commerce and the National Research Council each spent more than \$100 million for R&D in 1973-74. The funds provided by Industry, Trade and Commerce support extramural R&D, principally in Canadian industry, and are provided through established grants programs such as the Industrial Research and Development Incentives Act and the Program for the Advancement of Industrial Technology. The National Research Council spent 41% for in-house work, 10% for Canadian industry and 47% for Canadian universities and non-profit institutions. The 1973-74 R&D expenditures of the Department of the Environment are principally for in-house work, \$86 million of the \$96 million total, but contract expenditures are increasing. The Medical Research Council, entirely, and the Department of National Health and Welfare, primarily, fund extramural R&D activities, while the departments of Agriculture, and Energy, Mines and Resources are mainly performers of in-house R&D. Over 70% of the expenditures of Atomic Energy of Canada Limited and the Department of National Defence are for in-house R&D work but both also provide significant support to the extramural sector.

Related scientific activities expenditures of the federal government are devoted almost entirely to intramural operations — the \$288 million budget for 1973-74 included \$249 million in-house expenditures and \$1 million for administration of extramural programs. Table 9.3 gives a breakdown of expenditures by the main performers. The Department of the Environment is the major funder of these activities, allocating almost \$124 million to intramural activities.

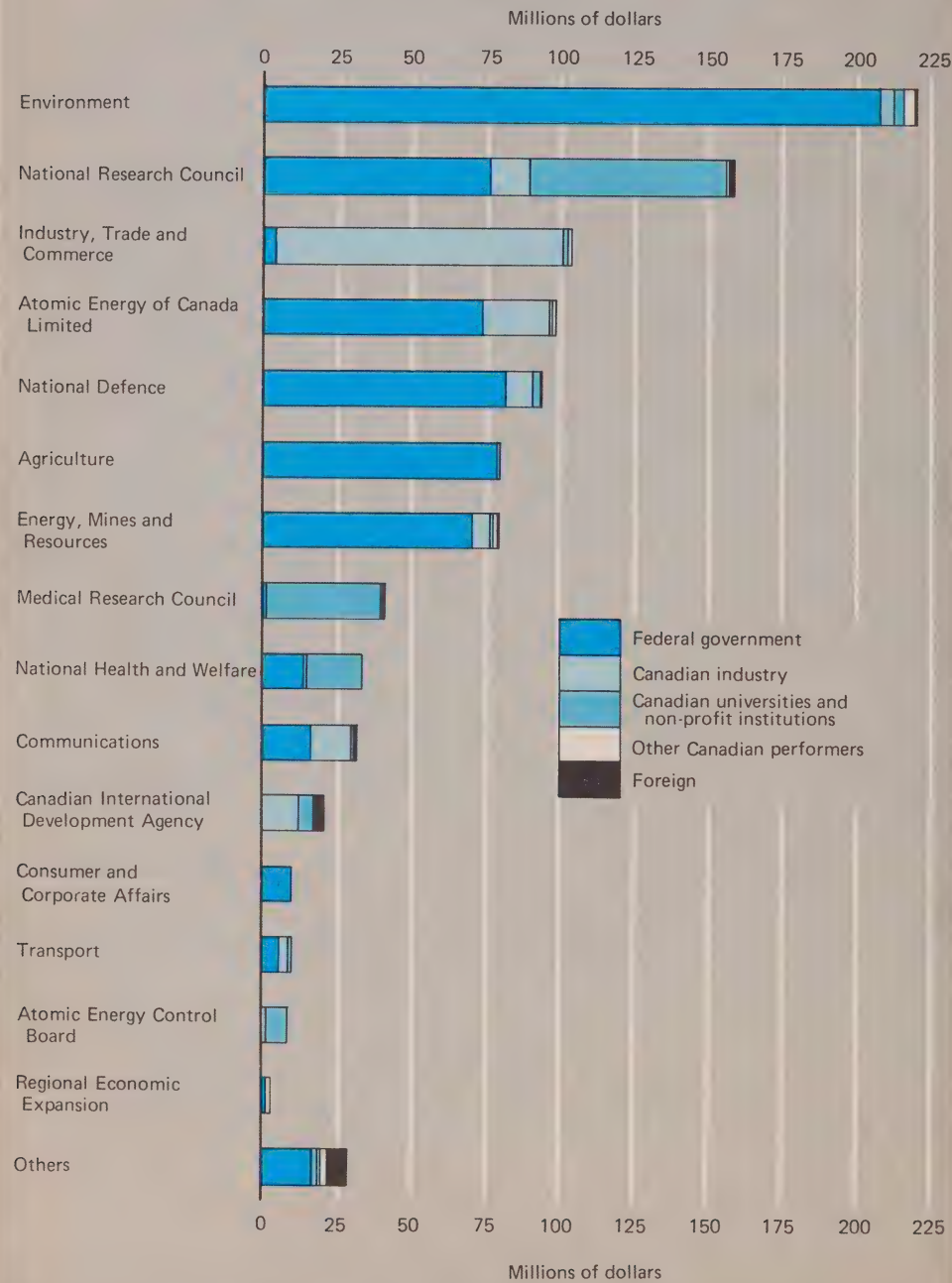
Scientific data collection — the gathering, processing, collating and analyzing of data on natural phenomena — is the principal related scientific activity supported by the federal government with expenditures of \$102 million in 1973-74. Examples of this activity include the collection and analysis of meteorological data by the Atmospheric Environment Service, geological surveys conducted by the Geological Survey of Canada and the collection of data on land use capability under the Canada Land Inventory.

Scientific information activities include the operation of libraries and the dissemination of scientific information and knowledge. This is rapidly becoming one of the most important related scientific activities of the federal government. Expenditures for this activity have more than doubled since 1970-71 to \$75 million for 1973-74. The Department of the Environment is the major spender in this area with \$35 million for 1973-74. The National Research Council also provides extensive scientific information services through the National Science Library, the Information Exchange Centre, the Technical Information Service and the publication of scientific research journals as well as support of symposia and conferences. Consumer and Corporate Affairs spent \$7 million for patent information services in 1973-74.

Testing and standardization is an important scientific activity of the Canadian Armed Forces with expenditures of \$38 million, all intramural, in 1973-74. The National Research Council is the second largest spender with \$5 million. The total for this activity in 1973-74 reached \$54 million. Projects include the testing of equipment (e.g. Post Office testing of mail handling machinery) and the development of national standards for materials, products and processes (e.g. the National Building Code).

Feasibility studies are a relatively small (about \$21 million in 1973-74) but important activity. Approximately one fourth of such expenditures are for studies carried out in federal establishments; the remainder are contracted to industry. The Canadian International Develop-

Federal government expenditure on natural sciences
by department or agency and performer,
year ended March 31, 1974



ment Agency is the major spender in this area with a \$9 million budget for 1973-74.

Amounts reported as scholarships include only those programs intended to assist the scientific education of the recipients. Awards designated as scholarships but which actually support the recipient in a research project are considered to be funds for R&D. In 1973-74 such research fellowships amounted to \$9 million while scholarship programs accounted for \$15 million. Scholarship programs are funded almost entirely by the National Research Council, the Medical Research Council and the Canadian International Development Agency.

9.2.2 Performers

The "performer" in this context is the sector in which the scientific activity is being conducted. The basic distinction is between in-house, intramural and extramural performance. In-house performance describes work carried out by units using their own personnel and facilities. Intramural is in-house work plus the cost of administration of extramural programs. Extramural work is financed by the government in other sectors to utilize special resources or to develop special personal and institutional capabilities.

Most federal government scientific activities continue to be carried on within its own establishments. However, since 1964-65 when in-house work accounted for 70% of the current expenditures, the proportion of in-house funding has slowly decreased; in 1973-74 approximately 61% of the current expenditures were in-house. Increased funding of extramural R&D accounted for most of the change. In 1964-65 in-house expenditures for R&D were 63% of the current expenditures; for 1973-74, 51% of these expenditures were for in-house work. Most of the related scientific activities funded by the federal government are conducted in its own establishments (86% of current expenditures in 1973-74).

In 1972 the federal government adopted a new policy to accelerate the trend toward extramural performance of R&D work. Known as the Make-or-Buy policy it requires that federal departments contract their R&D work to Canadian industry; details of this policy are discussed in Section 9.4. Since the policy applies only to new programs or additions to existing ones it is not expected to have a noticeable impact on scientific expenditures before 1974-75. There is, however, an already definite trend toward the support of Canadian industry among extramural performers. During the 1960s the emphasis in funding was on support of Canadian universities — payments increased from 36% of the extramural total in 1964-65 to 51% in 1969-70. Since that time, however, the share of this sector has declined steadily with a corresponding increase in payments to Canadian industry. Thus, in 1973-74 Canadian industry received 51% of the extramural payments and Canadian universities and non-profit institutions 42%.

Table 9.4 shows the distribution of current expenditures on scientific activities by sector of performance for 1973-74. Most of the payments for extramural scientific activities go either to Canadian industry or Canadian universities and non-profit institutions. The other Canadian sector includes provincial research councils and foundations, provincial and municipal governments and individuals not working in any other sector.

The entire range of scientific activities is performed in the establishments of the federal government. From free basic research to the development of highly specialized technology, these activities constitute a major portion of the total scientific effort in Canada. Some departments have whole programs devoted to scientific activities, for example, the Department of Agriculture's Research Program with a budget of \$72 million for 1973-74. In other departments, research is but a small proportion of the total budget.

The Department of the Environment is the principal performer of in-house research and development as well as related scientific activities. The various elements which now make up the Department of the Environment were themselves major performers of scientific activities; it is the merging of all these components into one large department rather than any new allocations which has made Environment the principal performer of scientific activities.

The diverse interests of the Department are expressed in the variety of research carried out in departmental laboratories. A major performer of R&D is the Fisheries and Marine Service with \$33 million for research and development in 1973-74. The Service operates nine establishments across Canada, with headquarters in Ottawa and research vessels on both coasts. Research activities are concerned with the use and conservation of freshwater and marine resources. Along with its research program the Fisheries and Marine Service con-

ducts development activities in support of industries that depend on fishery resources. The Marine Sciences Directorate of the Fisheries and Marine Service, with a scientific budget of almost \$37 million in 1973-74, conducts oceanographic research and surveys and charts coastal and inland navigable waters.

The Environmental Management Service consists of four main elements: the Lands Directorate, the Inland Waters Directorate, the Canadian Forestry Service and the Canadian Wildlife Service. The 1973-74 scientific budget totalled \$83 million. The Lands Directorate is concerned with land classification, land inventory and land-use planning; its scientific activities consist of data collection and information services. The Inland Waters Directorate gathers, analyzes and disseminates data on quality and quantity of water and related resources; it conducts research on all aspects of surface and sub-surface water, the properties of materials in water and waste-water, hydraulics, and the science of lakes and lake behaviour. In-house R&D expenditures in 1973-74 were \$5 million and data collection activities cost \$9 million. Much of the scientific activity of the Directorate is conducted at the Canada Centre for Inland Waters in Burlington, Ont. The Canadian Forestry Service conducts most of Canada's research into the protection and utilization of forest resources and the improvement of tree growth, spending over \$20 million for current in-house R&D in 1973-74. It operates regional laboratories, field stations and experimental areas across Canada. Research on the protection and preservation of wildlife is the responsibility of the Canadian Wildlife Service which spent \$11 million on scientific activities in this area in 1973-74.

The Atmospheric Environment Service performs basic atmospheric research, such as studies of atmospheric electricity, and applied research to support forecasting and data collection activities. Studies are carried out on the climates of Canada and meteorological information is applied to other scientific activities such as pollution research. In addition, the Service is a major provider of scientific data through its meteorological data collection activities (current in-house expenditures of \$36 million in 1973-74). Other related activities include the development, testing and calibration of meteorological instruments and the operation of the National Library of Meteorology at Toronto.

The Environmental Protection Service has the principal responsibility for dealing with environmental problems, particularly the development and enforcement of environmental protection regulations and controls. Its principal scientific activity is data collection (over \$500,000 in 1973-74). The Environmental Protection Service also serves as an information source for other federal departments administering legislation under which environmental regulations are developed.

The National Research Council is the only agency of the federal government with responsibility solely for scientific activities. Created in 1917 to provide Canada with qualified scientists and to promote research, the Council has profoundly influenced the development of science in Canada. Its activities cover all aspects of the scientific effort — intramural research, support of university and industrial research and scientific and technical information services.

In-house R&D activities are conducted in the National Research Council laboratories which consist of seven divisions, located in Ottawa, and two regional laboratories — the Prairie Regional Laboratory in Saskatoon and the Atlantic Regional Laboratory in Halifax. The 1973-74 in-house research budget reached \$50 million (current expenditure). Over \$17 million was spent on basic research; the Council is the principal federal performer of such research.

The aim of the regional laboratories is to carry out research activity yielding social and economic benefits to the region. Research at the Atlantic Regional Laboratory is concentrated in the fields of biology and chemistry. At the Prairie Regional Laboratory the emphasis is on fundamental studies to provide groundwork for applied research in agricultural production, such as research into the biochemistry of plants, micro-organisms and proteins.

Scientists at the Division of Biological Sciences in Ottawa are studying the structure/activity relationship in biological systems. Projects include such areas as X-ray crystallography, molecular biophysics and immunochemistry. It is also concerned with environmental, food and radiation biology. The current interest in environmental problems has led to the creation of an Environmental Secretariat within the Division to review relevant literature and recommend scientific criteria for pollutant levels.

The Division of Building Research was established in 1947 to provide a comprehensive applied research program, which includes the development and maintenance of the National Building Code, in support of the construction industry. The Division of Mechanical Engineering is principally engaged in work on manufacturing and transportation technology to assist Canadian industry in improving productivity and in the development of new products and processes.

The Division of Chemistry conducts both short-term projects of relevance to the natural resource and chemical industries and long-term fundamental research in areas of scientific and technical importance. Projects include work on auto-oxidation of organic molecules, reverse osmosis and the extraction of oil from tar sands.

The Division of Physics, like that of Chemistry, conducts both basic and applied research. It also works on the maintenance of basic physical standards and the calibration of instruments. It provides advice and information to industry and carries out general research, particularly in the area of space, metal and plasma physics as well as photogrammetry and spectroscopy. Considerable effort is devoted to the development of instruments suitable for industrial production.

The Radio and Electrical Engineering Division includes the Astrophysics Branch (basic research in radio and optical astronomy and phenomena of the upper atmosphere) which also operates the Algonquin Radio Observatory, research sections engaged in projects ranging from fundamental mathematical research to practical applications of electronics and electrical engineering, and an engineering design section.

The National Aeronautical Establishment has, over the years, conducted its activities in the service of industry, acquiring and utilizing major items of test equipment, such as wind tunnels. The diminishing requirements of the aircraft industry have allowed more resources to be devoted to other areas, such as research in road and motor vehicle safety.

Atomic Energy of Canada Limited. With a current in-house R&D budget of \$65 million in 1973-74, AECL is responsible for research into and development of peaceful uses of atomic energy; in particular the development of nuclear power systems to meet Canadian needs (see Chapter 13, Energy) and improved applications of radioisotopes and radiation, as well as selected research in the fields of physics, chemistry, materials science and radiation biology. The main research and development centres are the Chalk River Nuclear Laboratories in Ontario and the Whiteshell Nuclear Research Establishment in Manitoba.

These activities have led to the development of the unique CANDU system of nuclear power, whose success was marked in 1973 by the completion of the Pickering Nuclear Generating Station, the world's largest operating nuclear station and, in the same year, the choice of Canadian designs for nuclear power plants planned by Argentina and the Republic of Korea. Research and development continue within AECL with three objectives: further development of the CANDU system beyond the Pickering model, support to Canadian industry to build up the manufacturing capabilities demanded by the rapid expansion of nuclear power and assistance in expanding the required infrastructure of facilities and trained personnel.

AECL also operates the Power Projects group at Mississauga, Ont., providing engineering services for the building of CANDU nuclear power stations, the Commercial Products group with laboratories and a manufacturing plant at Ottawa and South March, Ont., which processes and markets radioisotopes and designs and manufactures related equipment, and the Heavy Water group with responsibility for ensuring adequate supplies of heavy water from plants designed and built in Canada.

The Department of National Defence R&D activities are carried out for the most part by the Defence Research Board. Projects are varied and often have important applications in other areas as well as for defence. The present emphasis is on projects relating to the defence of Canada's frontiers, especially the North, including such problems as the adaptation of men and machines to extreme cold. Testing and standardization activities are conducted by the Canadian Armed Forces.

The Department of Energy, Mines and Resources promotes the discovery, development and use of the country's mineral and energy resources. To achieve this goal the Department conducts research and data collection in the earth, mineral and metal sciences. The Geological Survey of Canada, for example, carries out geological, geophysical, geodetic and topographical

surveys, conducts research in the earth sciences and compiles inventories and disseminates information in these areas. The Mines Branch conducts research in support of industry on the extraction, processing, marketing and use of Canadian mineral resources. It is also active in the field of pollution abatement. Research conducted by the Earth Physics Branch is concerned with geomagnetism, gravity and seismology. The Atlantic Geoscience Centre at Halifax, NS, is involved in research into the geophysical properties of the seabed; such research has important applications to the exploration for off-shore oil. Northern scientific research in such areas as ice conditions is conducted by Energy, Mines and Resources through the Polar Continental Shelf Project.

The Department of Agriculture has the largest single budgetary program devoted entirely to research. Research conducted at the Central Experimental Farm in Ottawa and at regional laboratories across Canada involves all elements of the food chain — soils, crops, animals, plant and animal products — and includes investigation into disease as well as problems of food processing and storage. Other programs in Agriculture which include some scientific activities include the Administration Program (scientific information services), the Canadian Grain Commission (grain research at the Winnipeg laboratory) and the Health of Animals Program (animal and poultry diseases). Further details of these programs are given in Chapter 11.

The Department of National Health and Welfare accounts for most of the intramural expenditures of the federal government on health research; \$13.1 million was spent on research and development studies and related scientific activities in health fields in 1973-74. Major subjects of research were pharmacology, pharmaceutical chemistry, nutrition, microbiology, pesticides, food additives, clinical laboratory procedures, health services, prosthetics, epidemiology and physical fitness.

The Department of Communications spent \$9.5 million on current R&D conducted within the Department in 1973-74 on subjects concerned with communications problems such as radio-wave propagation, terrestrial and space communications systems, electronics, space mechanics and satellites. A major goal of space communications systems research is the development of systems that will provide services to remote areas of the North.

Regional distribution. Federal scientific establishments are located across Canada. Although the bulk of the scientific expenditures and personnel are concentrated in the National Capital Region, there are important establishments in all regions.

Those departments and agencies which maintain significant scientific establishments outside the National Capital Region include: Agriculture; Atomic Energy of Canada Limited; Energy, Mines and Resources; National Defence; and the National Research Council. The Ontario region (excluding Ottawa) has the second largest concentration of research expenditure and personnel, much of it due to the Toronto headquarters of the Atmospheric Environment Service which had total expenditures of \$42 million in 1973-74 for scientific activities. This should be taken into account when making comparisons with other regions as most other major headquarters are in the National Capital Region. Major establishments in Ontario also include the Canada Centre for Inland Waters at Burlington and the Institute of Environmental Medicine at Downsview.

The departments of Agriculture and Environment have important facilities in Quebec. The Atlantic Provinces are the location for a number of important laboratories, particularly those investigating marine problems such as the Bedford Institute at Dartmouth, NS. Major marine research installations are also located in British Columbia at Vancouver and Nanaimo and in Manitoba at Winnipeg (the Freshwater Institute, Fisheries Research Board). Agricultural, forestry and weather research installations are found across Canada. The National Research Council operates regional laboratories in Saskatoon and Halifax.

9.2.3 Personnel

Personnel engaged in scientific activities in the natural sciences in federal departments and agencies are shown in Table 9.5. Data relate to the fiscal year ending March 31, 1974. Continuing employees are reported as at September 30, 1973, while term, casual and seasonal employees reported are the total for the entire fiscal year. Personnel are classified into: executive, scientific and professional, administrative and foreign service, technical, administrative support, and operational for each of the activities — research, related scientific activities, or the administration of extramural programs.

A total of 25,908 man-years were reported for scientific activities in 1973-74, of which 23,614 were continuing (permanent) employees. The technical category accounted for the greatest number with 8,758 permanent and 628 temporary man-years; the scientific and professional category totalled 6,580 man-years. The principal scientific activity in terms of man-years, with 63% of the reported total, was research and experimental development which also accounted for 61% of the current intramural expenditures.

The Department of the Environment is the principal employer of scientific and professional personnel (2,122 in 1974); the next largest number of scientists (in man-years) is Agriculture with 1,008, followed by the National Research Council with 922. Environment is also the main employer of all scientific personnel accounting for 31% of the reported total man-years, double the number of the next department, Agriculture.

Data on the permanent scientific and professional staff involved in R&D show that 72% of the reported personnel hold advanced degrees. In the departments of Agriculture and National Health and Welfare over 60% of the reported scientific and professional staff hold doctorates. The major scientific employer, Environment, reported a total scientific and professional R&D staff of 1,128 with 46% at the doctoral level.

Personnel costs accounted for 69% of current in-house scientific expenditures in 1973-74. Environment reported 63% of its current intramural scientific budget for personnel and the National Research Council, 64%. Of the major employers the Department of Agriculture reported the highest proportion allocated to personnel, 80% of current intramural expenditures.

9.2.4 Aid to universities and non-profit institutions

Federal payments to Canadian universities and non-profit institutions for scientific activities in the natural sciences in 1973-74 exceeded \$150 million, of which \$135 million was for R&D. Almost one third (29%) of the R&D funds supported free basic research; medical science and public health R&D accounted for an additional 41%. Table 9.6 shows the distribution of payments by scientific activity. R&D contracts are steadily increasing in number but are still relatively minor compared to grants as a source of research funds for universities. The distinction, however, between grants and contracts has not been finely drawn; contracts are generally held to be more directly related to immediate departmental needs, often supplementing research in the department itself, while grants programs have more general long-range objectives. Research is often contracted out when departmental manpower is insufficient to staff all required projects or when the specific expertise required is not available within the department.

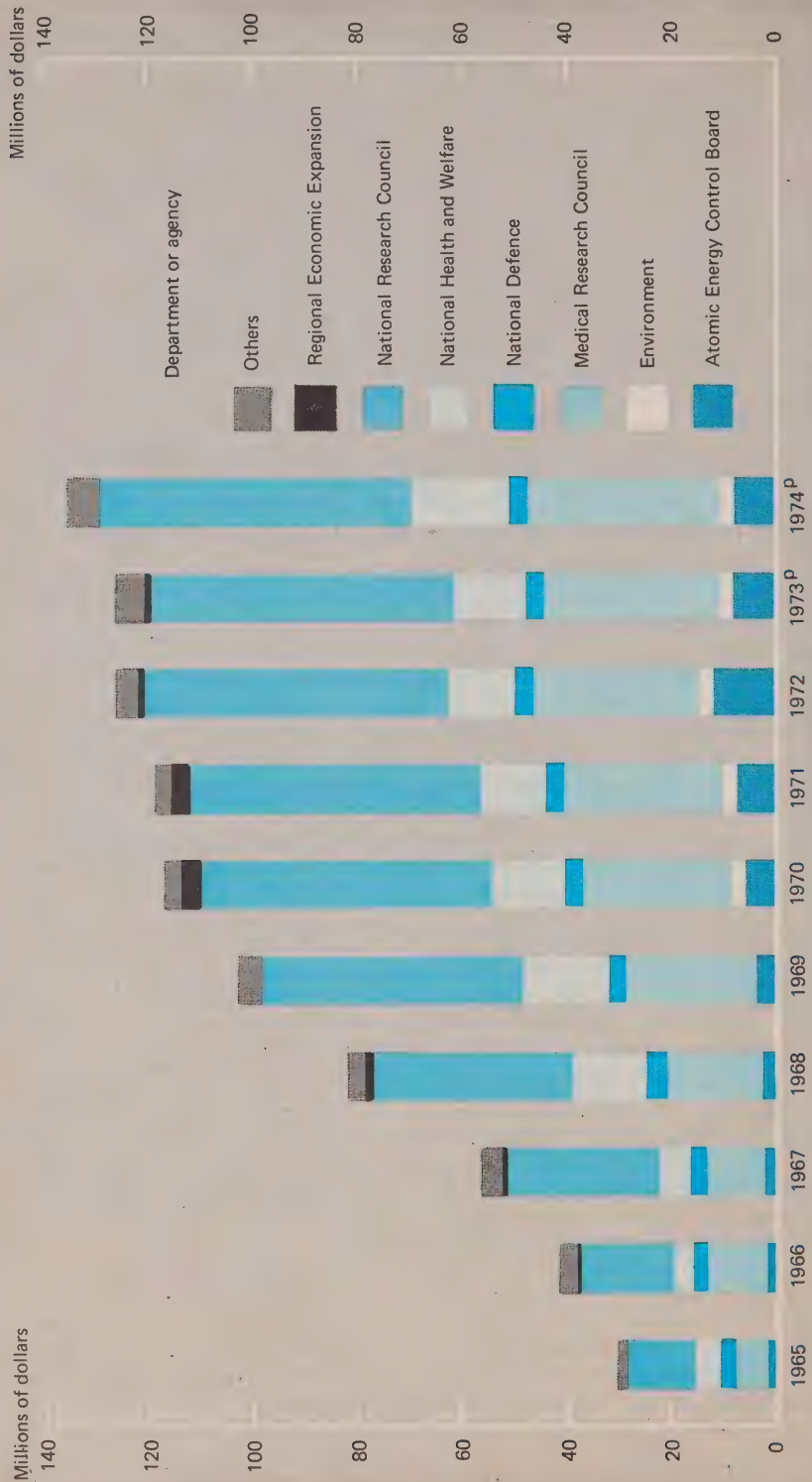
The Department of the Environment issues the most R&D contracts in this sector with expenditures of \$1.5 million in 1973-74. The departments of Communications and Indian Affairs and Northern Development each had contract expenditures of \$661,000 in 1973-74. Atomic Energy of Canada Limited, the departments of Energy, Mines and Resources, National Defence, and Transport all spent over \$300,000 in contracts to universities and non-profit institutions in 1973-74.

The National Research Council is the largest single federal funder of scientific activities in Canadian universities and non-profit institutions providing a total of \$67 million in 1973-74. The university support program has three broad objectives: the training and development of highly qualified manpower in science and engineering, the support of high quality independent research and the utilization of university research capability in solving problems of social and economic development. Support is provided through research grants to university staff members, special grants, scholarships and fellowships.

The principal types of grants to universities and their staffs are operating grants, equipment grants, negotiated grants and general research grants. Operating grants, for one or three years, are awarded to individual researchers at Canadian universities and are intended to contribute to the normal operating costs of research projects including salaries of assistants, minor equipment, materials and supplies, computing services, field trips and limited travel. Operating grants totalled over \$36 million in 1972. Equipment grants cover the purchase of single items of special research equipment costing in the range of \$5,000 to \$150,000.

Negotiated grants assist Canadian universities in initiating or developing research in areas significant to the economic and social development of the country. These grants funded such major installations as the linear accelerator at the University of Saskatchewan, the Van de

Payments to Canadian universities and non-profit institutions for natural science R & D, years ended March 31, 1965-74



Graaff accelerator at the University of Montreal and the Dalhousie Aquatron. In 1967, recognizing the need to bring groups of talented researchers together as well as to develop strength and depth in critical areas, the National Research Council initiated a new program of negotiated development grants intended to encourage research in areas important to the scientific, economic, regional and resource development of Canada. The first awards were in the field of materials science. In 1971 another type of negotiated grant, the project grant, of direct industrial significance, was initiated. This was designed to encourage and support the spin-off into Canadian industry of research developments arising in the course of university research. Close collaboration with a Canadian company is a prerequisite for one of these grants. The first such grant funded a group of chemical engineers undertaking research on the utilization of peat moss in the manufacture of hardboard and in the treatment of industrial waste. It is expected that greater emphasis will be placed on these negotiated grants in the future.

General research grants are awarded annually to Canadian universities where substantial National Research Council supported research is being done. The university is free to use the funds for the purpose of promoting scientific research in those fields supported by the National Research Council. These grants totalled \$3 million in 1972.

In addition to the grants programs the National Research Council also provides substantial support to individuals through scholarships and fellowships. In 1972, 2,309 persons were granted awards (out of 6,046 applicants). Postgraduate scholarships and postdoctorate fellowships are awarded in the fields of science normally supported by the National Research Council. In 1971 the Council initiated a program of postdoctorate fellowships tenable in Canadian industrial firms. These now account for almost 40% of all its postdoctorate fellowships. To encourage closer collaboration between industries and universities it also provides fellowships to university professors tenable in Canadian industry and to industrial scientists and engineers tenable in Canadian universities.

The Medical Research Council supports research and development in the health sciences (excluding public health) in Canadian universities and affiliated institutions. Research is supported primarily in the faculties of medicine, dentistry and pharmacy; however, projects in other areas which are relevant to health problems are considered. Research funds are distributed through three main programs: grants-in-aid of research, direct personnel support and special programs. The 1973-74 expenditures of the Medical Research Council were \$41 million.

The major portion of Medical Research Council expenditures are for grants-in-aid of research, of which there are two main types: operating grants and major equipment grants. These are intended to cover the normal direct costs of research. Grant expenditures were almost \$26 million in 1973-74. To encourage maximum utilization of facilities major equipment grants are normally made to the head of the department or division where the equipment will be located. Wherever possible, highly specialized equipment is provided for regional or national use, an example being the high-resolution mass spectrograph facility at McMaster University. Operating grants represent the bulk of the expenditures of the grants program. Normally made to a principal investigator to support his own research, such grants are not intended to cover the entire costs of a project; space and basic facilities must be provided by the institution. The scientific merit of applications is assessed by the Council's Grants Committees, composed of working scientists assisted by external reviewers.

The Medical Research Council program of direct personnel support includes studentships, fellowships, scholarships and associateships. Studentships support predoctoral graduate students for work leading to a higher degree. Fellowships permit those already holding advanced degrees to undertake research training in the health sciences; those who have completed their formal research training are provided an opportunity to demonstrate their independent research ability through the scholarships program. Finally, associateships provide salary support for a limited number of highly qualified investigators in Canadian universities to enable them to engage in independent research on a full-time basis.

The special programs of the Medical Research Council include the financing of Medical Research Council Groups for research in especially productive areas, for example, the Group for medical genetics at McGill University. Development grants assist universities in recruiting highly qualified investigators for full-time positions in areas (geographic or subject) needing development. In addition, to encourage collaboration and exchange of information, the Coun-

cil offers visiting professorships, awards to visiting scientists and support for scientific symposia. General research grants are made to deans of medicine, dentistry and pharmacy for use at their discretion in support of research in their schools. The total funds provided for all extramural programs of the Medical Research Council in 1973-74 were \$40.4 million.

The Department of National Health and Welfare also provides substantial support for research and development and other activities in the health sciences, principally in the field of public health. A total of \$19 million was expended in 1973-74, primarily under the Health Resources Fund and National Health Grant programs. These programs are designed to develop and improve the supply, quality and utilization of trained health personnel in Canada.

The Health Resources Fund was established in 1966 to assist in the construction of teaching and research facilities at universities, hospitals and other institutions engaged in health research and training. It provides capital grants covering up to 50% of the cost of approved projects. Operating costs are not funded through this program. Expenditures for research facilities in 1973-74 exceeded \$12 million; since its inception in 1966 through March 1974 over \$80 million has been granted for research facilities.

The Atomic Energy Control Board is authorized through the Atomic Energy Control Act to "establish through the National Research Council or otherwise scholarships and grants-in-aid for research and investigations with respect to atomic energy". Grants under this Act may cover both capital and operating expenditures for atomic energy research programs. Applications are evaluated by a jointly sponsored AECB/NRC Visiting Committee of experts. Each grantee is visited annually by at least one committee member, and every two years the entire committee visits to evaluate fund use and determine future requirements. Grants are used mainly to defray the cost of acquiring research equipment and for the operation and maintenance of such equipment, e.g. particle accelerators and associated equipment.

In 1973 grants and research agreements totalling \$2.5 million were awarded by the Atomic Energy Control Board to 12 universities. In addition \$5.3 million was granted in 1973 for the construction and operation of the TRIUMF (Tri-University Meson Facility) 500 MeV proton spiral ridge cyclotron which is located at the University of British Columbia. TRIUMF is a joint undertaking of the universities of Alberta, British Columbia, Victoria and Simon Fraser; \$4.7 million was granted for the support of TRIUMF in 1973-74 with an additional \$2.5 million for other grants and research agreements.

The Defence Research Board's University Grants Program, with expenditures of \$3 million in 1973-74, supports research in areas relevant to defence. The Program has three main objectives: to acquire new scientific knowledge to assist in the solution of technical defence problems; to develop and support a defence research capability in the scientific community; and to produce promising young scientists to work in the defence establishment. Grants are awarded on the basis of scientific quality and the relevance of the proposed project to defence needs. Projects are supported in such fields as engineering and technology, atmospheric sciences, biological sciences, chemistry, mathematics, medical sciences, oceanography, physics and solid state earth sciences.

The Department of Regional Economic Expansion and its predecessor, the Atlantic Development Board, have supported the development of a research capability in universities in the Atlantic Provinces through a program of capital grants for research facilities. These grants are for major equipment and do not provide for operating expenses or minor equipment. The grant pattern is irregular; expenditures were \$3.6 million in 1971 but less than \$1 million in 1972 and 1973. No such grants were given in 1973-74. Since 1966 over \$11 million has been granted under this program.

Other grants programs. In addition to the major university support programs discussed above, \$28 million was provided to Canadian universities and non-profit institutions in 1973-74 by other "mission-oriented" agencies and departments. This money was disbursed in the form of research grants and contracts (over \$9 million in 1973-74), scholarships, fellowships and support of other scientific activities. The scholarship and fellowship programs of these departments are aimed at producing qualified personnel in essential areas and are often granted to departmental staff to further their education and increase their qualifications.

The grants programs are designed to promote research in areas directly relevant to departmental objectives. The Department of Agriculture Research Program provides grants

for agricultural research with estimated expenditures of \$800,000 in 1973-74. Research projects in surveying and mapping, geological sciences and mining and mineral processing are funded through various grants programs of the Department of Energy, Mines and Resources. The Department of Indian Affairs and Northern Development provides grants to universities and non-profit institutions (\$310,000 in 1973-74) to promote northern oriented research and for northern scientific expeditions. Industry, Trade and Commerce is assisting in the establishment and maintenance of industrial research institutes at universities. Institutes supported by the program are located at Nova Scotia Technical College, École Polytechnique, and the universities of McGill, Montreal, Waterloo, Windsor and McMaster. This support totalled \$717,000 by 1973-74.

The variety of grants provided by the Department of the Environment reflects the diverse interests of this large Department, including research in meteorology, forestry, marine and aquatic problems, geography, pollution, water quality, wildlife and fisheries. Grants awarded by Environment approached \$2 million by 1973-74. R&D contracts were \$1.5 million for the same year.

The Ministry of Transport supports a program of development grants for transportation research. This program, now administered by the Transportation Development Agency, was previously maintained by the Canadian Transport Commission. Expenditures of \$110,000 to promote the development of teaching and research centres in transportation were disbursed in 1973-74.

The International Development Research Centre provides grant support to Canadian universities for research and development in areas relevant to the needs of developing countries. Grants for natural science research in 1973-74 were \$150,000.

9.3 Federal activities in the human sciences

Increasingly the human sciences are being recognized as an essential tool of government for dealing with the economic, social and cultural needs of society.

The term human sciences encompasses the disciplines generally referred to as the "social sciences and humanities". The human sciences include all disciplines involving the study of human actions and conditions and the social, economic and institutional mechanisms affecting them. This includes the sciences of anthropology, economics, human geography, law and sociology, political science and the social aspects of architecture, design, psychology and linguistics. In addition, the applied social science fields, such as public and business administration, commerce, communications, criminology, demography, agricultural economics, industrial relations, social work and urban and regional studies, are included. In those fields which pertain to both the natural and human sciences (e.g. archaeology, geography, psychology and linguistics), projects are classified by the dominant motivation and the objectives of the work. Multi- and inter-disciplinary projects involving both natural and human sciences are divided whenever possible and, when not, are classified in the dominant scientific area.

Research, in the context of the human sciences, is explanatory and innovative work undertaken on a systematic basis toward the acquisition of new knowledge about man, his actions and his institutions and the application of this knowledge in new ways. It is characterized by objectivity, controlled observation and measurement, and logical analysis. To be classified as research, projects must generally involve a substantial element of novelty, uncertainty and innovation, have a well-defined project design and result in a written report of results and procedures.

The related activities defined for the human sciences include general data collection, scientific information, education support and operations studies.

General data collection is the routine gathering, processing, collating and analysis of information on social and human phenomena. The information may be collected through routine surveys, regular and special investigations, or special compilations of existing records. Data collection which is part of a research project is considered to be research. Projects to develop new collection methods are also defined as research. Studies of data collection procedures and programs carried out to assess efficiency, costs or benefits, are considered operations studies. Examples of general data collection would include the quinquennial censuses, surveys of employment and production and the routine analysis of foreign economic statistics.

Scientific information activities involve the storage, classification and dissemination of information and knowledge resulting from scientific activities in the human sciences. This in-

cludes contributions to scientific journals (whether subsidies or subscriptions), grants to assist in the publication of doctoral theses and other research papers, support of learned and professional societies, scientific exhibits, films, conferences and symposia, and scientific libraries.

Education support, for the federal government, consists of grants to individuals or institutions specifically intended to support the education of students in the human sciences. Grants intended primarily to support the research activities of individuals are considered research (e.g. postdoctoral fellowships).

Operations studies include all studies of programs, policies and operation of departments and agencies aimed at the optimal utilization of committed resources. This would include the analysis and assessment of present programs, projects and policies and the development of standards, procedures and classification systems. Much of the work carried out by federal government departments in units with names implying research activity (e.g. Research and Development Section, Development and Integration Unit) actually falls into this category.

9.3.1 Expenditures

Federal government expenditures for activities in the human sciences was \$256 million in 1973-74 (Table 9.7). Expenditures were reported by 46 departments and agencies; however, two of these, Statistics Canada and the Canada Council, together account for more than one third of the reported total.

There has been a substantial increase in expenditures for human science activities since 1970-71, the first year for which comparable data are available. Current expenditures for 1973-74 represented a 113% increase over 1970-71. During the same period, natural science current expenditures increased by 29%. Approximately 30% of the current expenditures in 1973-74 were for research, the remainder for related scientific activities.

Total expenditures for activities in the natural sciences for 1973-74 were \$1,010 million (5.0% of total federal spending); for human sciences expenditures were \$256 million (1.3% of the total). Thus although human science expenditures have increased significantly since 1970-71, they remain a relatively small proportion of federal government expenditures for all scientific activities.

The pattern of intramural and extramural performance is about the same for the two groups of sciences. Almost 45% of the federal funds for R&D in the natural sciences in 1973-74 were spent outside the government; for the human sciences extramural research accounts for 45% of the current research expenditures. Most of the related scientific activities for both sciences are conducted intramurally. However, there is a major difference in the relative importance of the related scientific activities to total activities. In the natural sciences, related scientific activities represented 28% of the 1973-74 current expenditures, while in the human sciences they were 69% of the total. This reflects the importance of the collection of socio-economic data as a base for research in the human sciences.

For six of the 10 largest spenders, human science estimates accounted for more than half their total estimates for 1973-74 and these six agencies were responsible for 54% of the total human science estimates. Intramural human science activities are heavily concentrated in the National Capital Region (83%), but extramural payments are distributed more evenly.

9.3.2 Performers

Most of the expenditures of the federal government on scientific activities continue to be for work done in its own establishments. However, since 1965, when intramural work accounted for 70% of the current expenditures, the proportion of intramural funding has slowly decreased. In 1973-74 approximately 62% of the current expenditures were intramural. Canadian universities will receive the largest share of the extramural support (48% of all extramural funds) in 1973-74. Table 9.8 shows the distribution of current expenditures by sector of performance.

9.3.2.1 Intramural activities

Almost one half of the 1973-74 current expenditures for in-house scientific activities were spent by Statistics Canada, mainly for general data collection. The National Library was the next largest spender for in-house research in 1973-74, with over \$7 million in current expenditures. Other major federal performers of research include Manpower and Immigration, National Health and Welfare, the Economic Council and Urban Affairs. Each devoted more than \$3 million to in-house research in 1973-74.

Statistics Canada is principally concerned with the collection and dissemination of statistical information needed for understanding the Canadian economy and institutions and for the development of economic and social policies and programs. Research is conducted in such areas as input-output, econometrics, consumer income and expenditure, demography, manpower, urban and regional data bases, and sampling and survey methodology.

National Library. The storage, classification and dissemination of information in the human sciences is the major scientific activity of the National Library. An important current project is the development of an automated information retrieval service for the human sciences similar to the CAN/SDI service for the natural sciences provided by the National Science Library. Other activities include the automation of the national bibliography and surveys of Canadian libraries.

Manpower and Immigration. This Department is engaged in fundamental analysis of the economy and the labour market and the determination of short- and long-term manpower requirements. Research (42% of the Department's 1973-74 total expenditure) covers such areas as immigration, labour force trends, manpower projections and adult training.

National Health and Welfare. The Department of National Health and Welfare supports health oriented research in universities and non-profit institutions through the Health Care program, with estimated expenditures for human science projects of \$3.8 million for 1973-74, principally in the fields of psychology and sociology. Intramural activities include operations studies on hospital facilities and health care systems conducted in co-operation with the provinces; research on econometric models and attitudes toward health care usage; and development of qualitative indicators of health care. The Department also administers a grants program in support of research on the causes and consequences of the non-medical use of drugs and conducts in-house research on alcohol and drug abuse. The National Welfare Grants program enables the Department to support welfare research, manpower, policy and program development and other innovative projects on social welfare problems.

Economic Council. The Economic Council of Canada is an autonomous research and advisory body with a broad mandate to study and report on matters of economic concern. The right to publish without prior concurrence of the government allows the Council to present its views directly to a very wide public audience. The Act requires the Council to publish annually a review of medium- and long-term economic prospects and problems. The Tenth volume was issued in 1973. Consensus studies are issued individually without a predetermined timetable. Into this category falls the recently released report on *Toward more stable growth in construction* and ongoing work on financial markets, the labour market and Canadian commercial policy. In addition, research projects covering social indicators, regional studies, the long-term future and the CANDIDE model are also underway. A final major activity of the Economic Council is the sponsorship of the National Economic Conference, a forum which draws together a wide variety of leading business, labour and other representatives for more effective harmonization of economic decision-making.

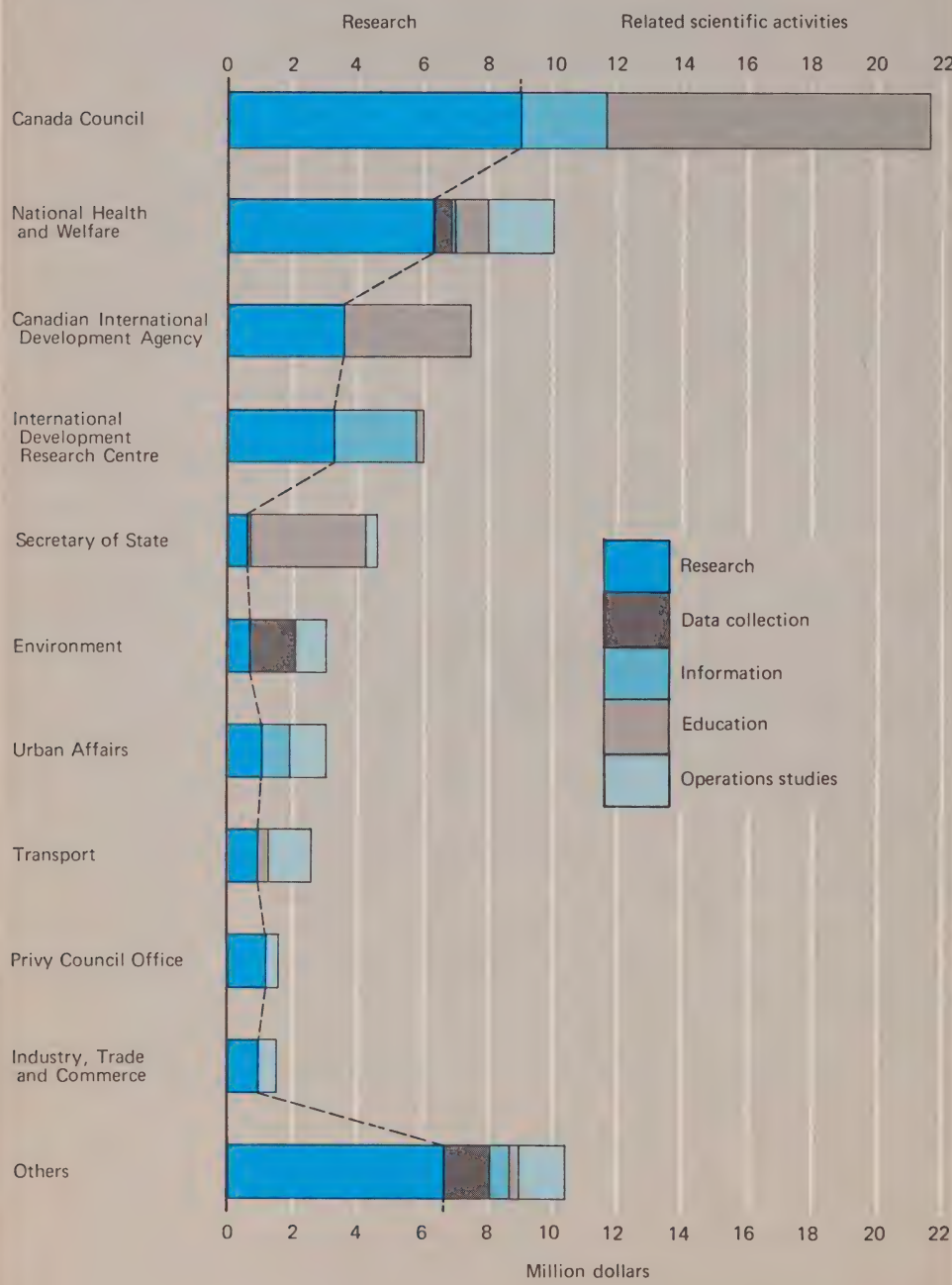
Urban Affairs. Formed in July 1971, this Ministry has rapidly increased its budget for scientific activities. Research in support of the development and co-ordination of urban policies is a major concern. Problems under study include transportation, housing, land use and development, population distribution and urban renewal.

Environment. The principal human science activity operated for the Department of the Environment is economic research and related activities with applications to fishery, forestry and water resource problems.

National Museums. The areas of research of the National Museum of Man include ethnolinguistics, ethnology, physical anthropology, prehistory, social and military history as well as studies on folk culture. Canadian subject matter is emphasized.

Labour. The human science activities of this Department are conducted in support of the planning and development of policies and programs for industrial relations and employment standards. Activities include surveys of occupational wage patterns, labour costs, industrial accidents and contract analysis as well as research on such problems as industrial conflicts, wage determination, labour law and collective bargaining.

Payments for extramural research and related activities
in the human sciences, by department or agency,
year ended March 31, 1974



Treasury Board conducts operations studies on the development and application of methods and procedures for evaluating the effectiveness and efficiency of government programs and projects, as well as the development of personnel policies, systems and methods.

Finance. Operations studies related to the maintenance of the tax system and the assessment of government policies in areas such as manpower utilization and the socio-economic environment are carried out by the Department of Finance. Such studies also involve analysis of current and future economic developments, and recommendations as to fiscal and exchange policy in relation to monetary and debt management policy.

9.3.2.2 Extramural activities

Almost one third of the 1973-74 expenditures for activities in the human sciences were payments to extramural performers of scientific activities. These payments included grants, contracts, research fellowships, scholarships and other payments.

Research is the major activity funded by federal departments in the extramural sector. It accounted for almost one half of the extramural payments for 1973-74. In 1973-74 the Canada Council provided more extramural research funds than any other department, \$9 million; it also provided an additional \$12.6 million for related activities, principally education support. Table 9.9 shows 1973-74 extramural payments by activity and source of funds.

The Canada Council spent almost \$18 million in the university sector in 1973-74 in support of activities in the human sciences (Table 9.10). Research funds are channelled through five programs: grants to university faculty and other scholars for free research in the human sciences; the Killam grants (senior research scholarships and special postdoctoral research scholarships to support scholars of exceptional ability in significant research); leave fellowships for university faculty who wish to engage in some form of creative scholarship, research or study; research fellowships to permit younger scholars to undertake full-time research; and, as part of the Cultural Exchange Program administered for the Department of External Affairs, providing grants to Canadian scholars for research in France.

Canada Council support for scientific information activities includes publication grants to specialized journals and block grants to the Humanities Research Council of Canada and the Social Science Research Council of Canada for the publication of scholarly manuscripts and for support of attendance at the annual meetings of the Canadian Learned Societies.

More than half of the 1973-74 Canada Council expenditures were for education support. This includes doctoral fellowships for students in the human sciences who have completed at least one year of graduate study beyond the honours BA or its equivalent; grants to Canadian universities and organizations to support prominent visiting scholars from other countries; and grants to foreign students for advanced study in Canada.

The Department of National Health and Welfare provides funds to provincial governments, universities and health agencies for research related to health needs, health planning and the utilization of health services and health care facilities. Research projects and surveys related to welfare problems and welfare administration as well as projects designed to develop applied research capability in the social welfare field are also supported. Assistance is provided to individuals through scholarships for professional studies in social work and fellowships for welfare research not related to candidacy for academic degrees. Sociological research into the non-medical use of drugs is also supported.

Canadian International Development Agency. Human science expenditures by CIDA include grants to international research organizations, scholarships to foreign students for study in Canada and assistance to Canadian scholars for studies related to international development. Expenditures for 1973-74 were \$7.4 million.

The International Development Research Centre is a public corporation funded by the federal government through a grant from CIDA. It was established to support research on problems identified by developing countries. The projects are conducted in the developing countries and utilize local personnel to develop the research capabilities, innovative skills and institutions required by these nations to solve their problems. The activities of the Centre concern both the human and natural sciences. Of a total budget of over \$15 million for 1973-74, approximately \$6 million was for human science activities. Research areas include population dynamics and policy, studies of the processes of modernization and change and, in the applied social sciences, regional, education, manpower and marketing studies. The Centre also pro-

motes the professional development of social scientists in developing countries through training and increased opportunities for contacts with others in their profession.

Central Mortgage and Housing Corporation supports research and other activities in the field of housing and community planning. Research projects cover various aspects of problems of urban rehabilitation, community development, housing design and the housing industry. Projects are supported at both Canadian universities and Canadian non-profit institutions and the Corporation works closely with the Building Research Division of the National Research Council.

The Ministry of State for Urban Affairs supports human science research and related activities at Canadian universities and in other sectors. Projects are regionally oriented and include such areas as planning of community facilities, systems for municipal control and decision-making and the information needs of citizen advisory groups.

9.3.3 Personnel

Manpower data in this section relate to the federal fiscal year ended March 31, 1974; continuing employees are reported as at September 30, 1973, while term, casual and seasonal employees are the total for the entire fiscal year.

Personnel costs represented 74% of the reported current expenditures for 1973-74. Employees engaged in research accounted for 20% of the total manpower while research expenditures were 30% of the total expenditures for the same period. This is attributed to the higher proportion of personnel in the scientific and professional and executive categories reported for research — almost 46% compared with 20% for the related scientific activities.

Statistics Canada is the largest employer of human science personnel accounting for over half the reported total man-years, however, 5,177 man-years were engaged in related scientific activities. The Public Service Commission reported the largest number of research man-years, 294, of which 173 were in the scientific and professional category. Other major employers (employing more than 85 man-years) of research personnel include the National Museums, Statistics Canada, the Economic Council, Environment, Manpower and Immigration, Bank of Canada, National Health and Welfare, and Urban Affairs (Table 9.11).

The Economic Council employed the largest number of personnel holding doctorates (22). Other departments reporting more than one third of their research staff as holding doctorates included Agriculture, Bank of Canada, Environment, National Museums and Veterans Affairs. All the reported staff of the Bank of Canada held a minimum of a Master's degree.

9.4 Industrial research and development

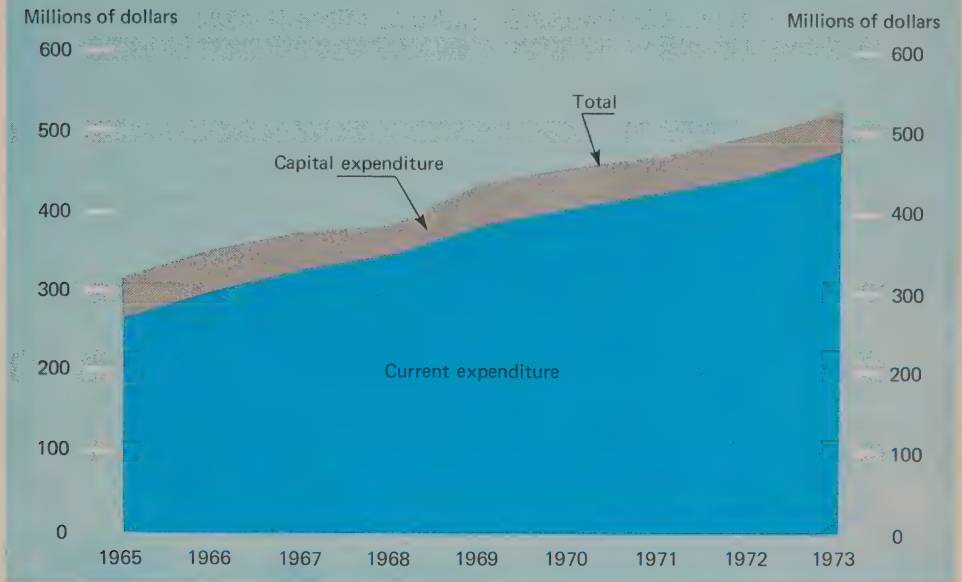
The pattern of industrial research and development in Canada is complicated by many factors. Among these are the geographic distribution of population, industry and resources; the historical development of a Canadian industry and its markets; and the size distribution of Canadian firms. One outgrowth of this is the concentration of R&D efforts. In recent years, the 25 leading performers have been responsible for more than 50% of Canada's current intramural industrial R&D expenditures while the first 200 performers have accounted for approximately 88% of such expenditures.

Similarly, some 84% of the R&D establishments are concentrated in Ontario and Quebec and these account for 90% of the current intramural R&D expenditures. Another 8% of the expenditures are made in British Columbia and Alberta. The remaining 2% of the work is distributed through the Atlantic Provinces, Manitoba and Saskatchewan.

Industrial R&D expenditures showed a rapid rise during the 1960s under the favourable economic climate of the period and the growing acceptance of the value of R&D by Canadian industry. If current dollars are considered, expenditures have continued to rise but in terms of 1961 dollars the rate of increase slowed between 1965 and 1969 and declined slightly between 1969 and 1972. In terms of a percentage of the gross national product the R&D share of expenditures has slowly declined from 1969 to 1972.

Naturally, the significance of R&D varies from industry to industry. The older, more mature industries with well-developed technologies tend to do less R&D than the younger industries. During the last half-dozen years the electrical, the chemical-based, and the machinery and transportation equipment industry groups have performed more than two thirds of Canadian industrial research and development.

R & D expenditure of Canadian industrial firms, years ended March 31, 1965-73



It is important to note that the major R&D performers, the electronics, instrument and aircraft industries, are greatly influenced by government decisions in the fields of defence, transportation and communications. There is little question that the tendency of governments to demand continually improved performance in such fields stimulates R&D in these areas. This is especially true where performance is the significant factor in determining the purchase of goods or systems.

Research and development expenditures are a form of investment in hopes of a future return. The risks involved can be considerable since there is rarely any assurance of success. The nature of these risks explains in part both the concentration and fluctuation of R&D expenditures. It is reasonable to assume that only the larger firms can or are willing to risk large sums since, in the extreme, they must be prepared to accept a total loss. Similarly, the amount of "high risk money" available will fluctuate according to the financial health of the firm.

Canadian industrial R&D is largely financed by industry itself. In 1971 R&D funds came from the following sources: reporting company 71%; federal government 16%; other Canadian sources 7%; and foreign sources 6%. The foreign sources were mainly parent or affiliated companies. Table 9.12 shows the growth of industrial R&D expenditures from 1965 to 1973 and Table 9.13 gives the amount spent intramurally by certain industrial groups.

The 16% originating with the federal government is composed of both contracts and grants. The major contracting agencies are Atomic Energy of Canada Limited and the departments of Communications, National Defence, and Environment. Most federal R&D assistance is provided under various grant programs.

The Department of Industry, Trade and Commerce administers the Programme for the Advancement of Industrial Technology (PAIT), the Defence Industry Productivity Program (DIP) and the Industrial Research and Development Incentives Act (IRDIA), while the National Research Council operates the Industrial Research Assistance Program (IRAP). The IRDIA program differs from the others in that it offers partial rebates for R&D expenditures which have been made in the past. The other programs offer grants in aid of work yet to be done.

The Make-or-Buy policy now in effect in the federal government requires each department to assess any proposed expansion of its R&D program to determine whether the work should be contracted out or done within the department. Work is to be contracted out unless questions of national security, conflict of interest, maintenance of national standards, unsuitability of work for industry or maintenance or use of special facilities arise.

A certain amount of research support for Canadian industry originates in the intramural research programs of government departments and agencies. A number of National Research Council programs have industrial implications. Some broaden Canadian industrial knowledge of processes and products. Others, such as the NRC building research programs, assist in the development of construction methods and building and fire codes.

The National Research Council provides Canada, and particularly small companies, with a technical information service. One section answers technical inquiries with the aid of the National Science Library, a second section maintains a technical awareness section which keeps interested parties informed of new technological developments, and a third section specializes in industrial engineering advisory services to assist industry in improving the efficiency of its manufacturing processes (see Section 9.6).

9.5 Provincial agencies

9.5.1 Economic planning

Nova Scotia's Voluntary Planning, an organization representing non-government elements of the Nova Scotia community, was established in 1963 with the general objective of involving the private sector, on a co-ordinated and balanced basis, in a continuing program of economic and social development.

The organization comprises the following main components: sector committees representing "grass roots" elements of producers, private business, labour and government in agriculture, construction, fisheries, forestry, mining, tourism, transportation and secondary manufacturing; advisory councils in consumer affairs, education, power development and labour-management affairs; the Provincial Planning Board, which is made up of the sector and council chairmen, together with other representatives of business, labour and government; and a small professional staff which provides administrative and technical support to the volunteer groups.

Voluntary Planning provides for the effective involvement of the private sector in development planning; facilitates the identification of problems by the private sector and relates appropriate private and public resources in an attempt to resolve these problems; and involves the private sector in the analysis of government planning proposals during the process of their development, prior to final approval.

Through this planning agency government has a single contact with all major elements of the private sector and the private sector has both a forum for discussing mutual problems and a direct channel to government for submitting co-ordinated views on any aspect of development planning.

Quebec Planning and Development Bureau. In 1969, the Quebec Planning Board, created the previous year, became the Quebec Planning and Development Bureau, a corporate body administered by a Director General, who is chairman, and five other members.

The Bureau is responsible for economic, social and territorial development. It prepares economic, social and territorial development plans, programs and projects; collects data and information; co-ordinates research and formulates recommendations; advises the government on the policies and programs of governmental agencies and departments; and acts as a co-ordinating agency between government departments and organizations. The Bureau also directs and ensures the carrying out of any plan, program or project for economic and social development entrusted to it by the Lieutenant Governor in Council and acts as co-ordinator and project supervisor and administers the funds entrusted to it.

Two organizations advise the Bureau on subjects referred to them for consultation: the Interdepartmental Planning and Development Council, comprising all deputy ministers of the Quebec government, and the Quebec Planning and Development Committee which represents Quebec socio-economic organizations, major specialized councils, regional representatives and special members.

The Bureau is responsible for administering the following agreements. The Canada—Quebec Co-operation Agreement for Development of the Lower St. Lawrence, Gaspé and Magdalen Islands, covering the period 1971-76, which began under the FRED program and replaced the 1968 agreement on Eastern Quebec; additional funds made available when the Agreement was revised facilitated a shift in emphasis to development programs. The Canada—Quebec Federal-Provincial Rural Agreement, 1971-75, which operates under the ARDA program, makes funds available to speed implementation of an integrated resource-development program in the Saguenay—Lac St-Jean and northwestern Quebec areas. The Canada—Quebec Federal-Provincial Agreement Concerning the Development of Special Areas covers development in the Quebec City, Trois-Rivières and Sept Îles—Port Cartier regions as well as in the sub-region of the new Montreal International Airport. Beginning in March 1974, the Bureau took over administration of the Quebec General Development Agreement which will replace the other federal development agreements as they expire.

The Ontario Economic Council, formed initially by Order in Council in 1962, was established by legislation in 1968. It is an organization in which representatives of a broad cross-section of informed people can pool their knowledge and experience regarding social and economic questions, commission research and formulate policy recommendations to the public and private sectors. At present, 21 Ontario citizens serve on the Council representing business, finance, labour, agriculture and universities. Each member serves without compensation for a term of one, two or three years. The Council meets not less than five times a year, generally in Toronto although meetings are held occasionally in other Ontario centres. A permanent Council staff undertakes direct assignments and supervises the design and administration of projects assigned to others on a consulting basis. Areas of study are established as a result of liaison and discussion with the public and private sectors.

The Council is an independent body. The results of its work are made available to government and the public and recent reports cover the fields of economic, environmental, social and municipal policies in Ontario. The Council works in co-operation with the Economic Council of Canada.

9.5.2 Industrial research

Non-profit industrial research institutes have been set up by provincial governments for the purpose of helping industry solve technical problems and develop provincial resources. They are active participants in the industrial innovation process. Since they are often associated with universities they also serve to bring together R&D facilities and needs of industry and the universities.

Table 9.13 shows how each of these institutes was financed in 1971. The percentage of funds obtained from various sources is a function both of the particular responsibilities assigned to each institute by the various provincial governments and of the industrial environment which differs from province to province. The Quebec Industrial Research Institute received all its funds from the provincial government in 1971 principally because it had only recently begun operations; its sources of funds are expected to become more diversified in future. The exceptionally high amount of provincial subsidies and grants for the Alberta Research Council is due to the large volume of work done for provincial government departments. The prominence of industrial contracts in Ontario, and to a lesser extent in British Columbia, reflects, in part, the favourable industrial environment in these two provinces. Grants and subsidies from the provincial governments are the primary source of funds for all institutes except those in Ontario and British Columbia, accounting for 60% of the total in 1971. The second largest source of funds is derived from contracts with private industry, which made up 20% of the 1971 total. Lastly, 14% of the funds originated from the federal government with almost all of it being channelled through contracts.

Research and development are not the provincial institutes' only activities, although they constitute the largest items of current intramural expenditures. These activities accounted for 54% of expenditures in 1971 and 56% in 1972. In view of the fact that the purpose of the institutes is to provide services to industry, activities such as resource surveys, analysis and testing, and industrial engineering, as well as library and technical information services accounted for a relatively large percentage of their expenditures.

The Nova Scotia Research Foundation was created by the government of Nova Scotia in 1946 to provide industry and government with scientific and technical assistance in finding new and

better ways to utilize the natural resources of the province and to assist the processing industries. The Foundation's laboratories are located in Dartmouth and were built with funds granted by the Atlantic Development Board on a 10-acre site donated by the province. The building was first occupied in 1969 and now houses a staff of 80 which includes 62 scientists and technicians.

The Foundation is governed by a board made up of scientists and industrialists and its operations are carried out in seven divisions. The Geophysics Division carries out gravity, seismic, magnetic, well-logging and electromagnetic surveys on land, and seismic bottom profiling and magnetic surveys at sea for industry and for government. It sponsors a program of research on the surficial geology of Nova Scotia. The Chemistry Division, through research and development, utilizes the minerals and other natural resources of the province to develop new processes and products. Contract services are available to industry and government in areas of inorganic and food chemistry, pollution control and chemical engineering.

The Operational Research Division provides a service for industry and government by utilizing the mathematical techniques of systems analysis and undertakes projects in the area of optimal resource allocation, production scheduling and distribution. The Engineering Physics Division makes available developments in applied physics to Nova Scotia industry. Emphasis is at present placed on research and development in electronic and mechanical engineering and in measurement techniques. The Technical Services Division provides technical information on materials, equipment and processes and gives industrial engineering assistance to manufacturing industries. The various sections include technical inquiries, industrial engineering and a related information centre. The Applied Biology Division carries out research on the distribution, growth, conservation and utilization of commercial seaweeds. The Division is also involved in microbiological research related to water pollution and the treatment of industrial waste waters. The library is well stocked with scientific and technical information to aid the Research Foundation staff, industry and government.

A *Research foundation bulletin*, issued occasionally, keeps industry advised of Foundation activities and of important discoveries in science and technology. The *Research record* gives a descriptive account of past research projects. Annual reports are published on a regular basis.

The New Brunswick Research and Productivity Council is a body corporate set up in 1962 by an Act of the New Brunswick Legislature. It is governed by an independent group of prominent citizens from management, labour and the professions, which meets four times a year. Members are appointed for three-year terms. The capital investment was provided by the federal government. The majority of the Council's operations are carried out on a cost-recovery basis under contract with industry, trade associations, and national and international agencies. The Executive Director has charge of all matters relating to the administration of Council affairs and has supervision over and direction of the work of the staff. The Council maintains a well-equipped centre for engineering and problem-solving, industrial research and development and, in addition to its provincially oriented projects, conducts research on a cost-recovery basis for clients in other areas of Canada and in other countries.

Quebec Industrial Research Institute, established by a National Assembly Act on December 12, 1969, is a corporation as defined in the Civil Code. The Institute is composed of a Director General and 14 members from industry, university and government. Its main objectives are: research in applied sciences carried out either in its own laboratories or in those of other research institutes; development of products, processes and equipment of an industrial or scientific nature; and collection and distribution of technological and industrial information. Headquarters are located in the vicinity of Quebec City.

The Ontario Research Foundation (ORF), established in 1928, is an independent corporation. It derives its powers from a special Act of the Ontario Legislature and is responsible to a board of governors consisting of leading members of the industrial, commercial and scientific communities. The organization was financed initially by an endowment fund, provided by industrial and commercial corporations through the Canadian Manufacturers' Association, and a matching grant from the provincial government. Most of its current income is derived from contract research undertaken mainly for industry. In recent years the Ontario government has provided an annual grant to ORF, the amount of which is directly proportional to ORF's income from industry. The Foundation is concerned primarily with the development of Canadian industry through the application of science and technology. Also, at the request of the

various departments of the Ontario government, it undertakes work relative to the natural resources of the province. Foundation activities are not restricted to the province; work is undertaken for any organization in Canada on the same basis.

The Foundation undertakes industrial research and development for companies and government agencies as requested, particularly with respect to natural resources and to defence; provides and maintains an effective and efficient applied research and development facility for the use of industry and government agencies, using funds provided by the Ontario government to support the back-up research necessary for this purpose; and brings to the attention of industry and government agencies research opportunities that promise economic or social benefits. Situated in the Sheridan Park Research Community, ORF has a staff of approximately 305 scientists, engineers, technicians and service personnel.

Since its establishment, ORF has provided both large and small companies with research and development services. These have ranged from short-term investigations and feasibility studies, through product and process development to long-range fundamental scientific investigations. All research and development projects are conducted on a confidential basis, including all business, technical or proprietary information revealed to ORF by clients or prospective clients. Patents resulting from research and development studies are assigned to the client.

The Manitoba Research Council consists of seven members and 16 advisory members representing natural-resource-based industry, manufacturing, labour, the universities and government. Permanent staff members are provided by the provincial government. Its work is financed by provincial government appropriations, although fees and service charges may be levied for its services. The Council promotes or carries out, or causes to be promoted or carried out, research and development investigations related to the natural resources and industrial operations of the province. At present, research sponsored by the Council is performed in existing research laboratories of the province. Much of the research is aimed at establishing Manitoba as a centre of excellence in food products, electronics, materials research and building systems. In addition, through a technical information service, industries are encouraged to incorporate new technological developments in their operations. The main reason for the establishment of the Council is to assist Manitoba industry to improve its market position by developing a more scientifically based production capability. The Council maintains an office in Winnipeg.

The Saskatchewan Research Council was set up in 1947 under an Act of the Saskatchewan Legislature. The Council carries out research in the physical sciences with the aim of improving the provincial economy with particular emphasis on the commercial exploitation of provincial resources and the scientific aspects of business. At first the Council had no scientific personnel and laboratory facilities of its own, and carried out its research programs at the University of Saskatchewan by means of grants to members of the staff and scholarships to graduate students. The 1947 Act was amended in 1954 to empower the Council to acquire property, employ staff and conduct its own financial affairs. Laboratory buildings were erected on the university campus in 1958 and were extended in 1963. The present program places emphasis on technical assistance to industry and provincial government departments, research in the areas of metallic and industrial minerals, water, the environment, slurry pipeline transportation and selected aspects of agriculture. A large part of the program is carried out by a full-time staff of about 100 but some of the Council's research is still promoted by grants to university staff. The members of the Council consist of representatives of the Saskatchewan government, the university and industry.

Research Council of Alberta. The government of Alberta set up a scientific and industrial Research Council in co-operation with the University of Alberta in 1921 to promote mineral development within the province. Considerable effort is still directed toward the development of natural resources, but increasing emphasis is being given to research related to the establishment of new industries within the province, to transportation and to environmental problems. The principal areas of activity are fossil fuels development and utilization, geological surveys and research, groundwater, soils, industrial minerals, chemical product and process development, microbiology, technical assistance to industry, gasoline and oil testing, pipeline transportation, highway research, river engineering, environmental studies and hail research.

The operations of the organization are controlled by a Council of 15 individuals representative of the Alberta government, the universities and industry. The various research fields are

reviewed by advisory committees of specialists drawn from industry, the universities and provincial government. The activities of the Research Council of Alberta are financed by provincial government appropriations and by contract research for private industry and federal agencies. The main Council laboratories and offices are located on the University of Alberta campus in Edmonton. A pilot plant and laboratory facility is located in the Clover Bar area east of the city. The full-time staff comprises approximately 250 scientists, engineers, technologists and supporting personnel.

B C Research performs a technical function for the British Columbia Research Council, a non-profit industrial research society with offices and laboratories at Vancouver, BC. This function is to enable even the smallest firms to improve their competitive position in Canadian and world markets by the use of the most up-to-date scientific knowledge. B C Research carries out contract research for clients on a confidential basis, initiates in-house research programs designed to promote and utilize the resources of the province, and provides a free technical information service in collaboration with the National Research Council. B C Research is active in the areas of applied biology, chemistry, engineering, physics, ocean engineering, operations research, industrial engineering, industrial market studies and economic feasibility studies.

9.6 Scientific information

The National Research Council provides extensive scientific information services through the National Science Library, the Technical Information Service and the publication of scientific research journals as well as support of symposia and conferences.

The National Science Library serves as a focal point of a developing national scientific and technological information system. Through co-operative measures with both national and international information agencies, its activities are designed to provide the Canadian scientific and industrial communities with direct and immediate access to resources and services not available locally.

The library's collection of nearly 1 million volumes includes approximately 20,000 journal titles from all parts of the world. Many of its technical and research reports are in microfiche form from which copies can be provided. Its resources are made available by an extensive interlibrary loan service. This service includes the identification of obscure publications and, if necessary, a search for locations elsewhere in Canada, the United States and abroad.

Increasing use is being made of computers and related electronic data processing equipment to organize, retrieve and expedite the dissemination of information. One such service is CAN/SDI, a current-awareness service, by subscription, for the selective dissemination of information on a regular basis (weekly or bi-weekly). In SDI, a client's subject interests are put on a tape which is matched against each new computer tape of literature references as soon as it is received from the various data base services. The resultant print-out lists the most recent relevant articles which the client should see. Over 500 search editors across Canada have been trained at NSL by means of two-day seminars to assist with developing SDI interest profiles for members of their respective organizations. The National Science Library has now arranged for CAN/SDI output centres in three other government departments utilizing tapes of particular relevance, i.e. the Geological Survey of Canada Library for geology, Agriculture Canada Library for agriculture and the National Library for social sciences.

The *Union list of scientific serials in Canadian libraries*, prepared by the library with the co-operation of other libraries in Canada, records the title, holdings and location of approximately 45,000 scientific and technical journals received by over 240 Canadian libraries. The data for this publication are stored on magnetic tape and updated regularly for computer print-out as new editions are required.

The library maintains the Canadian index of scientific translations, a card index to the location in Canada or elsewhere of translations of articles written in foreign languages. A complete English translation of the Russian journal *Problemy severa* (*Problems of the North*) is prepared by the Translations Section. The library also publishes the *Directory of Canadian scientific and technical periodicals*, *Conference proceedings in the health sciences*, *Scientific and technical societies of Canada*, *Scientific policy*, *Research and development in Canada* (a bibliography), and other publications related to its own activities.

The NSL's computerized Information Exchange Centre for Federally Supported Research

in Canadian Universities publishes an annual directory which provides detailed information on "who is doing what research, where and how supported".

The Technical Information Service provides manufacturing industry with technical information, advice and assistance at no charge on a self-help basis. From field offices located throughout the country, qualified engineers and scientists establish and maintain direct contact with industry. They identify and formulate problems or need for information; search reliable sources, retrieve, analyze and adapt up-to-date and appropriate information; and, if required, transfer and assist in the implementation of recommendations. The field engineers, as well as the head office staff with whom they are linked, rely primarily on their knowledge and experience in industry but also have access to sources such as the National Science Library, the National Research Council and other government departments or agencies' laboratories, other industries, professional associations, as well as foreign sources of scientific and technical information.

TIS offers three types of services: the Technical Inquiry Service, the Industrial Engineering Service and the Technological Development Program. The Inquiry Service staff specializes in solving specific problems related to materials, their properties and treatment, to products, processes and techniques. They also help manufacturing industry keep pace with advances in research and technology, thus promoting increased productivity or the introduction of new products or processes.

The Industrial Engineering Service is a team of industrial engineers assisting manufacturers to resolve their technical problems and improve production. This is done through information guidance and assistance in the analysis of work situations, improvement in processes and facilities, and implementation of systems by which the enterprise can operate and control production for optimum results. All types and sizes of industries can request guidance in plant layout, production control, materials handling, warehousing and several other areas of industrial engineering.

The Technological Development Service, by means of various audio-visual media, offers current awareness programs. The Canadian Technical Awareness Program (CAN/TAP) provides industrialists with periodical lists of technical documents especially selected by the staff and matched to industrial users' interests by computer. These documents or articles are selected from worldwide scientific and technical literature on the basis of their usefulness to industry.

Other programs such as the Subject Retrieval Program and the Industrial Reference Guide Program complement a film library and various other audio-visual materials. TIS engineers from both NRC and the provincial research councils or foundations with which they have contract agreements, contact several thousand industries and answer well over 25,000 inquiries each year.

Sources

- 9.1 Information Services, Ministry of State for Science and Technology.
- 9.2 - 9.4 Education, Science and Culture Division, Institutional and Public Finance Statistics Branch, Statistics Canada, in co-operation with the respective departments.
- 9.5 Supplied by the respective agencies.
- 9.6 National Science Library, National Research Council.

Tables

...	not available	e	estimate
...	not appropriate or not applicable	p	preliminary
—	nil or zero	r	revised
--	too small to be expressed	certain tables may not add due to rounding	

9.1 Federal government expenditure on the natural sciences, years ended Mar. 31, 1965-74 (million dollars)

Performer	1965	1966	1967	1968	1969	1970	1971	1972	1973P	1974P
Total, expenditure	365.5	436.7	495.9	578.6	668.4	700.0	777.4	836.9	920.0	1,010.2
Federal government ¹	271.0	310.1	343.2	395.6	435.9	450.3	489.3	530.7	597.5	649.8
Canadian industry	59.1	78.2	87.2	87.5	111.6	115.2	151.8	157.4	164.7	184.5
Canadian universities and non-profit institutions	33.7	46.4	62.7	91.2	113.4	128.2	130.2	138.6	138.8	150.7
Other Canadian performers	0.8	1.1	1.2	1.9	3.0	1.7	1.9	2.2	7.6	10.0
Foreign	0.9	0.9	1.6	2.4	4.5	4.6	4.2	8.0	11.4	15.2
Research and development	281.6	339.1	381.2	450.1	523.9	539.1	587.9	615.2	655.2	722.1
Federal government ¹	194.9	221.0	240.3	281.2	305.8	307.5	320.2	342.3	369.6	400.3
Canadian industry	55.8	75.5	83.7	84.4	108.9	109.8	144.0	138.5	146.3	167.2
Canadian universities and non-profit institutions	30.0	41.3	55.6	81.7	102.6	116.4	118.5	125.4	125.8	135.0
Other Canadian performers	0.6	0.9	0.9	1.6	2.6	1.3	1.5	1.7	2.9	5.4
Foreign	0.3	0.4	0.7	1.2	4.0	4.1	3.7	7.3	10.6	14.2

¹Includes administration costs of extramural programs.

9.2 Federal government expenditure on the natural sciences, by department or agency and performer, year ended Mar. 31, 1974 (million dollars)

Department or agency	Federal government ¹	Canadian industry	Canadian universities and non-profit institutions	Other Canadian performers	Foreign	Total
Environment	207.2	4.8	3.6	3.6	0.1	219.3
National Research Council	75.8	12.9	66.8	0.5	2.0	158.0
Industry, Trade and Commerce	3.3	97.8	1.2	1.0	—	103.3
Atomic Energy of Canada Limited	73.1	23.5	0.8	0.3	0.1	97.8
National Defence	80.8	9.3	3.2	—	0.5	93.8
Agriculture	77.9	—	0.8	—	—	78.7
Energy, Mines and Resources	70.5	6.0	1.5	0.5	0.2	78.7
Medical Research Council	0.9	—	38.3	—	2.0	41.2
National Health and Welfare	13.1	0.2	19.5	—	—	32.8
Communications	15.9	13.9	0.6	—	0.8	31.2
Canadian International Development Agency	—	12.5	5.0	—	3.4	20.9
Consumer and Corporate Affairs	8.8	—	—	—	—	8.8
Transport	5.4	2.6	0.6	—	—	8.6
Atomic Energy Control Board	—	0.1	7.2	—	—	7.3
Regional Economic Expansion	0.1	—	—	1.9	—	2.0
Others	17.0	1.1	1.5	2.2	6.1	27.9
Total	649.8	184.7	150.6	10.0	15.2	1,010.2

¹Includes administration costs of extramural programs.

9.3 Federal government expenditure on R&D and related scientific activities in the natural sciences, by department or agency, year ended Mar. 31, 1974 (million dollars)

Department or agency	R&D		Related scientific activities					Capital	Total
	Current	Capital	Current	Data collection	Scientific information	Testing and standardization	Feasibility studies	Scholarship programs	
Environment	81.1	14.6	69.2	34.8	3.3	4.7	—	11.6	219.3
National Research Council	125.0	3.2	0.5	10.4	5.5	0.9	7.3	5.2	158.0
Industry, Trade and Commerce	102.8	—	—	—	—	—	0.5	—	103.3
Atomic Energy of Canada Limited	89.2	4.3	1.1	2.3	0.8	0.1	—	—	97.8
National Defence	50.5	2.7	—	1.9	38.3	—	—	0.4	93.8
Energy, Mines and Resources	37.4	4.3	22.9	10.6	0.9	0.7	—	1.9	78.7
Agriculture	71.0	4.2	0.7	2.6	0.1	—	—	0.1	78.7
Medical Research Council	39.6	—	0.2	0.1	—	—	1.3	—	41.2
National Health and Welfare	27.2	0.6	1.0	0.3	3.0	—	0.6	0.1	32.8
Communications	24.6	6.0	—	0.3	—	0.3	—	—	31.2
Others	30.6	3.3	6.6	12.0	2.2	14.5	5.0	1.2	75.4
Total	679.0	43.2	102.2	75.3	54.1	21.2	14.7	20.5	1,010.2

9.4 Principal application of current expenditure on natural science R&D, by performer, year ended Mar. 31, 1974 (million dollars)

Application	Federal government	Canadian industry	Canadian universities and non-profit institutions	Other ¹	Total
Free basic research	10.4	—	39.6	0.9	50.9
Agriculture	72.2	—	0.8	0.4	73.4
Construction	7.2	1.0	0.1	—	8.3
Defence	38.8	9.4	3.3	0.5	52.0
Developing countries	—	—	0.2	6.8	7.0
Energy	70.1	26.4	8.1	0.7	105.3
Fisheries	12.0	0.6	0.4	—	13.0
Forestry	16.1	0.9	0.7	1.0	18.7
Public health	7.2	0.2	6.3	0.4	14.1
Medical sciences	2.1	—	49.4	2.0	53.5
Manufacturing industry	16.7	111.8	0.8	1.2	130.5
Meteorology and weather	4.6	0.1	0.6	—	5.3
Mineral location and extraction	19.2	0.5	0.7	1.7	22.1
Northern development	2.6	0.3	1.1	0.1	4.1
Pollution	20.1	0.3	0.7	0.1	21.2
Space	9.8	13.1	—	1.6	24.5
Telecommunications	8.2	0.4	0.5	—	9.1
Transportation	10.3	1.8	0.7	0.1	12.9
Water resources	3.2	0.2	0.6	0.1	4.1
Others	17.4	0.1	20.4	2.0	39.9
Total	348.2	167.1	135.0	19.6	669.9

¹Includes other Canadian and foreign performers.

9.5 Personnel engaged in scientific activities in the natural sciences, by federal department or agency and category, 1973-74 (man-years)

Department or agency	In-house research			In-house related scientific activities			Administration of extra-mural programs	Total
	Scientific and professional	Technical	Other	Scientific and professional	Technical	Other		
Environment	1,128.5	1,186.0	925.0	989.0	2,137.0	1,536.1	9.1	7,910.7
Agriculture	956.6	1,021.9	2,148.3	51.2	63.5	69.5	—	4,311.0
National Research Council	694.0	888.0	651.0	211.0	158.0	324.0	67.0	2,993.0
National Defence	412.0	726.0	700.0	61.0	617.0	307.0	70.8	2,893.8
Energy, Mines and Resources	684.0	344.0	261.0	210.0	666.0	640.0	3.0	2,808.0
Atomic Energy of Canada Limited	643.0	855.0	816.0	37.0	57.0	63.0	—	2,471.0
National Health and Welfare	183.5	195.8	111.1	23.1	28.2	65.3	16.4	623.4
Communications	144.0	159.0	206.5	5.0	—	7.0	—	521.5
Consumer and Corporate Affairs	—	—	—	219.0	50.0	220.0	—	489.0
Others	111.3	116.0	87.4	74.6	96.5	133.8	266.8	886.4
Total	4,956.9	5,491.7	5,906.3	1,880.9	3,873.2	3,365.7	433.1	25,907.8

9.6 Payments to Canadian universities and non-profit institutions for natural science R&D, years ended Mar. 31, 1965-74 (million dollars)

Department or agency	1965	1966	1967	1968	1969	1970	1971	1972	1973P	1974P
Atomic Energy Control Board	1.3	1.6	2.0	2.5	3.6	5.4	7.1	11.7	7.9	7.2
Environment	—	—	—	—	—	3.4	2.8	2.8	2.8	3.4
Medical Research Council	6.2	11.5	11.2	18.5	25.1	28.0	30.7	32.0	33.8	36.8
National Defence	2.4	2.5	2.9	3.7	3.2	3.3	3.3	3.4	3.1	3.2
National Health and Welfare	4.1	4.2	6.5	14.5	16.8	14.4	12.4	12.6	13.8	19.0
National Research Council	14.6	18.1	29.1	37.9	49.8	55.5	55.5	58.5	58.2	59.6
Regional Economic Expansion	—	0.1	0.4	1.4	—	3.7	3.6	0.6	0.7	—
Others	1.4	3.4	3.9	3.2	4.1	2.7	3.1	3.8	5.5	5.8
Total	30.0	41.4	56.0	81.7	102.6	116.4	118.5	125.4	125.8	135.0

9.7 Federal government expenditure on the human sciences, by activity and performer, year ended Mar. 31, 1974 (thousand dollars)

Scientific activity	In-house scientific activities	Administration of extramural program	Provincial and municipal governments	Canadian universities	Canadian non-profit institutions	Canadian business enterprises	Foreign	Total
Current expenditure								
Research	36,951	3,022	2,173	15,508	6,408	3,379	7,026	74,467
Data collection	88,252	101	1,788	457	428	835	—	91,861
Information	13,993	1,151	134	2,663	1,039	281	2,510	21,771
Education	96	675	—	15,140	23	4	4,008	19,946
Operations studies	35,039	583	1,560	476	2,208	3,526	250	43,642
Capital expenditure	4,028	—	—	—	—	—	—	4,028
Total	178,359	5,532	5,655	34,244	10,106	8,025	13,794	255,715

9.8 Current expenditure on the human sciences, by department or agency and performer, year ended Mar. 31, 1974 (million dollars)

Department or agency	In-house scientific activities	Administration of extramural programs	Provincial and municipal governments	Canadian universities	Canadian non-profit institutions	Canadian business enterprises	Foreign	Total
Statistics Canada	80.6	—	—	—	—	—	—	80.6
Canada Council	0.1	1.1	—	17.9	—	..	3.7	22.8
National Health and Welfare	3.8	0.9	1.9	4.5	3.5	..	0.1	14.7
International Development								
Research Centre	1.4	1.8	—	—	—	—	6.0	9.2
Manpower and Immigration	7.2	0.4	0.3	0.1	..	0.6	..	8.6
National Library	7.4	—	—	..	0.1	0.2	—	7.7
Canadian International								
Development Agency	0.3	—	—	3.8	—	—	3.6	7.7
Urban Affairs	3.1	0.1	0.5	1.0	1.0	0.5	..	6.2
Indian Affairs and Northern								
Development	3.0	0.2	0.2	0.3	0.6	0.2	—	4.5
Economic Council of								
Canada	3.5	—	—	..	—	0.2	..	3.7
Transport	0.5	0.3	—	0.6	..	2.1	..	3.5
Others	63.4	0.7	2.8	6.0	4.9	4.2	0.4	82.5
Total	174.3	5.5	5.7	34.2	10.1	8.0	13.8	251.7

9.9 Payments for extramural research and related activities in the human sciences, by department or agency, year ended Mar. 31, 1974 (million dollars)

Department or agency	Research	Related scientific activities				Total
		Data collection	Information	Education	Operations studies	
Canada Council	9.0	—	2.6	10.0	—	21.6
National Health and Welfare	6.3	0.6	0.1	1.0	2.0	10.0
Canadian International						
Development Agency	3.6	—	—	3.8	—	7.4
International Development						
Research Centre	3.3	—	2.5	0.2	—	6.0
Secretary of State	0.6	0.1	..	3.6	0.3	4.6
Environment	0.7	1.4	—	—	1.0	3.1
Urban Affairs	1.1	—	0.8	—	1.1	3.0
Transport	1.0	..	—	0.3	1.3	2.6
Privy Council Office	1.2	—	—	—	0.4	1.6
Industry, Trade and						
Commerce	1.0	—	—	—	0.5	1.5
Others	6.7	1.4	0.6	0.3	1.4	10.4
Total	34.5	3.5	6.6	19.2	8.0	71.8

9.10 Payments for extramural activities in the human sciences, year ended Mar. 31, 1974 (million dollars)

Activity and source of funds	Canadian universities	Canadian non-profit institutions	Other performers	Total
ACTIVITY				
Research	15.5	6.4	12.6	34.5
Data collection	0.5	0.4	2.6	3.5
Information	2.7	1.0	2.9	6.6
Education	15.1	--	4.0	19.1
Operations studies	0.5	2.2	5.3	8.0
Total	34.3	10.0	27.4	71.7
SOURCE OF FUNDS				
Canada Council	17.9	—	3.7	21.6
National Health and Welfare	4.5	3.5	2.0	10.0
Canadian International Development Agency	3.8	—	3.6	7.4
Regional Economic Expansion	—	0.9	—	0.9
International Development Research Centre	—	—	6.0	6.0
Central Mortgage and Housing Corporation	0.1	0.9	0.2	1.1
Other departments and agencies	8.0	4.8	12.0	24.8

9.11 Personnel engaged in research in the human sciences, by department or agency and category, 1973-74 (man-years)

Department or agency	Executive	Scientific and professional	Administrative and foreign service	Technical	Administrative support	Operational	Total
Agriculture	—	47	—	8	19	—	74
Bank of Canada	2	51	1	33	8	—	95
Central Mortgage and Housing Corporation	1	19	17	2	35	—	74
Consumer and Corporate Affairs	4	29	7	3	18	—	61
Economic Council of Canada	3	59	7	13	45	—	127
Environment	—	57	9	18	30	—	114
Indian Affairs and Northern Development	—	42	3	2	5	30	82
Labour	4	29	10	12	14	—	69
Manpower and Immigration	1	41	21	3	30	—	96
National Health and Welfare	2	43	2	13	26	—	86
National Museums of Canada	1	44	10	51	49	77	232
Public Service Commission	—	173	14	20	84	3	294
Statistics Canada	—	103	7	26	63	—	199
Urban Affairs	2	48	3	20	12	—	85
Others	13	196	43	49	113	11	425
Total	33	981	154	273	551	121	2,113

9.12 R&D expenditure of Canadian industrial firms, years ended Mar. 31, 1965-73 (million dollars)

Year	Current expenditure			Payments outside Canada	Total	Capital expenditure	Total
	In Canada		Total ¹				
	Intramural	Extramural					
1965	236.8	12.8	239.0	27.7	266.7	50.6	317.3
1966	266.4	13.8	269.1	30.8	299.9	50.7	350.6
1967	290.6	15.1	293.9	34.5	328.4	43.7	372.1
1968	305.1	16.1	308.8	36.3	345.1	35.8	380.9
1969 ^r	342.9	22.8	346.8	37.4	384.2	49.0	433.2
1970	355.2	27.1	358.7	45.0	403.7	48.3	452.0
1971	370.9	30.6	373.9	49.1	423.0	46.0	469.0
1972 ^p	383.6	33.0	386.9	53.8	440.7	52.9	493.6
1973 ^p	420.5	33.4	423.8	54.4	478.2	50.1	528.6

^aTo avoid double counting, certain transfers from one respondent to another have been subtracted from the sum of all Canadian intramural and extramural expenditures. Such transfers would be entered once as intramural and once as extramural.

9.13 Industrial R&D expenditure, year ended Mar. 31, 1971

Industry group	R&D estab- lishments ¹ No.	Intramural R&D expenditure			Source of funds			
		Current \$'000,000	Capital \$'000,000	Total \$'000,000	Reporting company		Federal government	
					\$'000,000	% of total	\$'000,000	% of total
Mines and wells	32	17.4	0.9	18.3	13.4	73	1.4	8
Chemical-based	271	79.7	6.9	86.7	74.5	86	5.1	6
Wood-based	55	19.9	1.0	20.9	14.5	69	2.1	10
Metals	70	35.5	4.0	39.4	35.9	91	2.3	6
Machinery and transpor- tation equipment	109	66.2	2.9	69.2	41.3	60	16.8	24
Electrical	142	120.4	9.4	129.8	84.1	65	24.2	19
Other manufacturing	48	8.3	0.3	8.6	7.0	81	1.1	13
Other industries	44	23.5	20.5	44.0	23.3	53	13.5	31
Total	771	370.9	46.0	416.9	294.0	71	66.5	16

¹A company may have more than one R&D establishment: 320 companies had no R&D establishment.

Sources

9.1 - 9.13 Education, Science and Culture Division, Institutional and Public Finance Statistics Branch, Statistics Canada.

Chapter 10

Renewable resources

10.1 Forestry

The forests of Canada are largely coniferous and comprise 35% of the total land area; of this forest, 74% is suitable for regular harvest. In 1971, 4,227 million cu ft of roundwood were cut. The harvesting and processing of this timber generated work for 259,000 persons with a payment of \$2,091 million in salaries and wages. The “value added” by processing beyond the raw materials stage amounted to \$3,520 million which was 9.1% of the value added of all goods-producing industries.

Canada is a major exporter of forest products. Exports of wood, wood products and paper in 1971 amounted to \$3,140 million which was 18% of the value of all commodity exports. Paper and paperboard constituted 40% of all forest products exports; newsprint alone accounted for 35%.

British Columbia, Ontario, and Quebec are the most important timber-producing provinces. In 1971 British Columbia sawmills produced 70% of all lumber in Canada and most of the sulphate pulp and softwood plywood while Ontario and Quebec produced most of the groundwood pulp and hardwood plywood.

There is a growing awareness of the importance of the forest in such areas as recreation, wildlife habitat and streamflow regulation. The recognition of these values is fostering a broader and more realistic concept of forestry.

10.1.1 Forest resources

10.1.1.1 Forest regions

The forests of Canada cover a vast area in the north temperate climatic zone but wide variations in physiographic, soil and climatic conditions cause marked differences in their character; hence, eight fairly well-defined forest regions may be recognized. By far the largest of these is the Boreal Region which represents 82% of the total forested area. The Great Lakes—St. Lawrence Region covers 6.5% and the Subalpine Region 3.7%. The Montane, Coast, and Acadian regions each account for approximately 2% while the remaining Columbia and Deciduous regions each represent less than 1%.

Boreal Forest Region. This Region comprises the greater part of the forested area of Canada. It forms a continuous belt from Newfoundland and the Labrador coast westward to the Rocky Mountains and northwestward to Alaska. White spruce and black spruce are characteristic species; other prominent conifers are tamarack which ranges generally throughout, balsam fir and jack pine in the eastern and central portions, and alpine fir and lodgepole pine in the western and northwestern parts. Although the Boreal forests are primarily coniferous there is a general admixture of deciduous trees such as white birch and poplar; these are important in the central and south-central portions, particularly along the edge of the prairie. In turn, the proportion of spruce and larch increases to the north and, with the more rigorous climate, the close forest gives way to an open lichen-woodland which finally changes into tundra. In the eastern section, along the southern border of the Region, there is a considerable intermixture of species from the Great Lakes — St. Lawrence forest, such as eastern white pine, red pine, yellow birch, sugar maple, black ash and eastern white cedar.

Great Lakes—St. Lawrence Forest Region. Extending inland from the edges of the Great Lakes and the St. Lawrence River lies a forest of a very mixed nature which is characterized by eastern white pine, red pine, eastern hemlock and yellow birch. With these are associated certain dominant broadleaved species common to the Deciduous Forest Region, including sugar maple, red maple, red oak, basswood and white elm. Other species with wide ranges are the eastern white cedar and largetooth aspen and, to a lesser extent, beech, white oak, butternut and white ash. Boreal species such as white spruce, black spruce, balsam fir, jack pine, poplars, and white birch are intermixed, and red spruce is abundant in certain central and eastern portions. This Region extends in a westward direction into southeastern Manitoba but does not include the area north of Lake Superior.

Subalpine Forest Region. This is a coniferous forest located on the mountain uplands of Alberta and British Columbia, from the Rocky Mountain range through the interior of British Columbia to the Pacific Coast inlets. The characteristic species are Engelmann spruce, alpine fir and lodgepole pine. There is a close relationship between the Subalpine Forest Region and the Boreal Forest Region, which also shares black spruce, white spruce and trembling aspen. There is also some penetration of interior Douglas-fir from the Montane forest, and western hemlock, western red cedar and amabilis fir from the coastal forests. Other species are western larch, whitebark pine, limber pine and, on the Coast Mountains, yellow cypress and mountain hemlock.

Montane Forest Region. The Region occupies a large part of the interior uplands of British Columbia, as well as a part of the Kootenay Valley and a small area on the east side of the Rocky Mountains. It is a northern extension of the typical forest of much of the western mountain system in the United States, and comes in contact with the Coast, Columbia, and Subalpine Forest regions. Ponderosa pine is a characteristic species of the southern portions. Interior Douglas-fir is found throughout, but more particularly in the central and southern parts; lodgepole pine and trembling aspen are generally present, the latter being particularly well represented in the north-central portions. Engelmann spruce and alpine fir from the Subalpine Forest Region, together with white birch, are important constituents in the northern parts. White spruce, although primarily Boreal in affinity, also grows here. Extensive prairie communities of bunch-grasses and herbs are found in many of the river valleys.

Coast Forest Region. This Region is part of the Pacific Coast forest of North America. Essentially coniferous, it consists principally of western red cedar and western hemlock, with Sitka spruce abundant in the north and Douglas-fir in the south. Amabilis fir and yellow cypress are represented throughout the Region and, together with mountain hemlock and alpine fir, are common at the higher altitudes. Western white pine is found in the southern parts, while western yew is in widely scattered groups. Deciduous trees, such as black cottonwood, red alder and bigleaf maple, have a limited distribution. Arbutus and Garry oak grow only on the southeast coast of Vancouver Island, the adjacent islands and mainland. The arbutus is a broadleaved evergreen. Both are species whose centres of population lie southward in the United States.

Acadian Forest Region. Over the greater part of the Maritime Provinces there is a forest closely related to the Great Lakes—St. Lawrence forest and, to a lesser extent, to the Boreal forest. Red spruce is a characteristic though not exclusive species, and associated with it are balsam fir, yellow birch and sugar maple, with some red pine, eastern white pine, jack pine and eastern hemlock. Beech was formerly a more important forest constituent than at present, but beech bark disease has drastically reduced its representation in Nova Scotia, Prince Edward Island and southern New Brunswick. Other species of wide distribution are white spruce, black spruce, red oak, white elm, black ash, red maple, white birch, grey birch and poplars. Eastern white cedar, although present in New Brunswick, is extremely rare elsewhere and jack pine is apparently absent from the upper St. John Valley and the western half of Nova Scotia.

Columbia Forest Region. A large part of the Kootenay Valley, the upper valleys of the Thompson and Fraser rivers and the Quesnel Lake area of British Columbia contain a coniferous forest, called the Columbia Forest Region, which closely resembles the Coast Forest Region. Western red cedar and western hemlock are the characteristic species in this interior "wet belt". Associated trees are the interior Douglas-fir which has general distribution and, in the southern parts, western white pine, western larch, grand fir and western yew. Engelmann spruce from the Subalpine Forest Region is important in the upper Fraser Valley and is found to some extent at the upper levels of the forest in the remainder of the Region. At lower elevations in the west and in parts of the Kootenay Valley, the forest merges with the Montane Forest Region and in a few places borders directly on grassland.

Deciduous Forest Region. A small portion of the deciduous forest, which is widespread in the United States, extends into southwestern Ontario between Lakes Huron, Erie and Ontario. Here, with the deciduous trees common to the Great Lakes—St. Lawrence Forest Region, such as sugar maple, beech, white elm, basswood, red ash, white oak and butternut, are scattered a number of other deciduous species which have their northern limits in this locality. Among these are the tulip-tree, cucumber-tree, pawpaw, red mulberry, Kentucky coffee-tree,

redbud, black gum, blue ash, sassafras, mockernut hickory, pignut hickory, black oak and pin oak. In addition, black walnut, sycamore and swamp white oak are confined largely to this Region. Conifers are few but there is scattered distribution of eastern white pine, tamarack, eastern red cedar and eastern hemlock.

The Grasslands. Although not a forest region, the prairies of Manitoba, Saskatchewan and Alberta support several species of trees in great numbers. Trembling aspen forms groves or "bluffs" around wet depressions, and continuous dense stands along the northern boundary. Several other species of poplar are usually found along rivers and in moist locations, along with willows and some white spruce. There are sporadic stands of white birch, Manitoba maple, bur oak and ash. In British Columbia, where the grasslands are confined to deep valleys and low areas of the interior, there are scattered representations of ponderosa pine, birches, poplars, spruce and mountain alder.

10.1.1.2 Forest land

Inventories of the forest resources of Canada are made periodically by provincial forest authorities and, with their co-operation, the Canadian Forestry Service of the Department of the Environment compiles national statistics.

The 1968 National Forest Inventory reported an area of 1,244,292 sq miles of forest land (Table 10.1). Of this total, 26,616 sq miles are reserved by legislation for primary uses other than timber production. The remainder is divided into two categories — 919,208 sq miles suitable for regular harvest and 298,467 sq miles which cannot be harvested regularly because of slow regeneration and growth. Nevertheless, this second category is capable of producing trees of merchantable size and, as inventories are extended and refined, its area can be expected to increase. Currently, only 65% of the forest land of Canada has been inventoried in the sense of gathering statistically reliable information on area and forest cover.

Provincial Crown forest land constituted 69% of the non-reserved forest land of Canada, leaving 23% under federal jurisdiction and 8% in private ownership. Of the provincial forest land 69% is allocated to timber production and of the federal forest land less than 2% is so allocated. Although precise use of private forest land is a matter of speculation, individual studies and limited statistics suggest that timber production still predominates despite a tendency to convert some of this land to recreational use. At the time of the 1968 inventory 10% of the non-reserved forest land was considered inadequately stocked for timber production.

The estimates of volumes of timber, which are given by province in Table 10.1, are also subject to constant revision as more accurate and complete inventories are compiled. The volumes reported in the 1968 National Forest Inventory are smaller than those reported previously despite more extensive inventory coverage. This is the result of two factors — first, the 1963 inventory, which was the basis for previously presented information, provided rough estimates of timber volumes in Labrador and in the Yukon Territory and Northwest Territories but, in the absence of reliable data, these areas were not covered in the 1968 inventory; secondly, British Columbia adopted procedures whereby data on volume of mature timber only were compiled.

10.1.1.3 Canada's forest trees

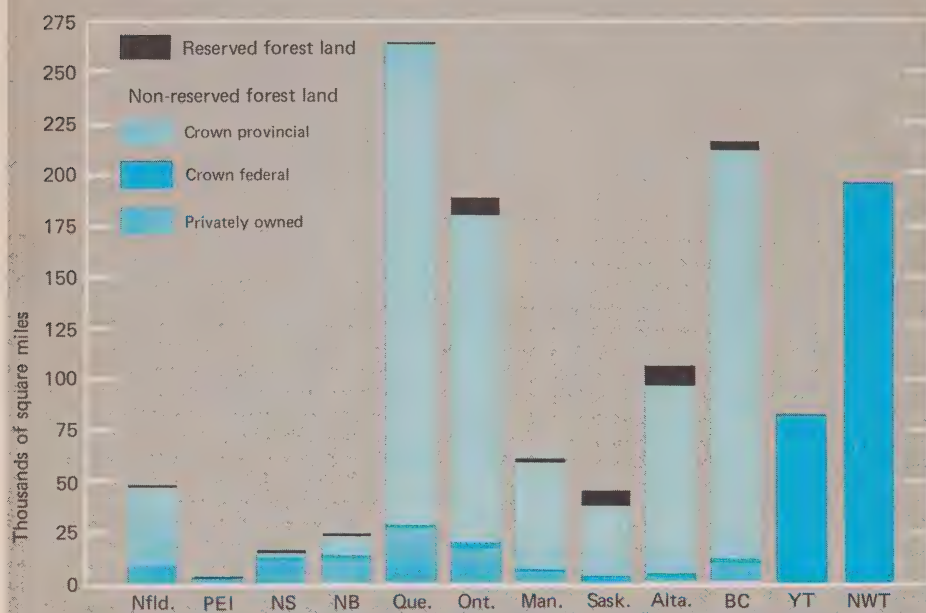
There are approximately 140 recognized tree species in Canada, excluding the various subspecies and varieties. Of this number, 31 species are conifers or "softwood", about two thirds of which are of commercial value; less than one fifth of the native broadleaved trees or "hardwoods" can be considered as commercially significant.

The most abundant forest trees in Canada, in terms of standing timber, are the spruces, pines, true firs, poplars, hemlocks, birches, cedars, Douglas-fir, maples and larches. However, the economic importance of these species, except for the spruces, does not necessarily correspond to their abundance.

About one third of Canada's timber volume is spruce. White spruce and black spruce range from the Atlantic Coast almost to the Pacific and northward into Alaska. Sitka spruce, the largest of the native spruces, is found in the Pacific Coast area; Engelmann spruce is established farther inland, extending to the foothills of the Rockies in southwestern Alberta; and red spruce is found only in eastern Canada. Spruce is used extensively for pulpwood, lumber and plywood.

Among the pines, two species — jack pine and lodgepole pine — comprise 11% of

Total forest land (1968 forest inventory)



Canada's standing timber. Jack pine grows from Nova Scotia to northern Alberta and the Northwest Territories and lodgepole pine is found in western Alberta, British Columbia and the Yukon Territory. Eastern white pine, which grows from the Atlantic to the eastern edge of the prairies, and western white pine produce valuable softwood lumber. Ponderosa pine, found in the drier areas of southern British Columbia, and red pine, found in eastern Canada, are important commercial species.

The four native firs are all commercial species, although balsam fir far outranks the other species in this regard. It is the only fir found in eastern Canada and ranges from Newfoundland through all the provinces except British Columbia. Alpine fir, essentially a high altitude tree, is found over a wide area in British Columbia and its range extends well into the western half of central Alberta and the Yukon Territory. Amabilis fir is a west coast species, while grand fir is found in both the Pacific coastal areas and the interior of British Columbia. Fir is commonly cut as pulpwood and, to a lesser extent, as sawlogs.

Douglas-fir, one of Canada's best known commercial trees, is not a true fir. The tree responsible more than any other for British Columbia's world-wide reputation for timber is the coastal form of Douglas-fir which is dominant in the forests of the province's lower coastal areas. An interior form, known as blue Douglas-fir, is used on a large scale for lumber, plywood, construction timbers, piling and kraft pulp.

The poplars are the most abundant of the native broadleaved trees. They include trembling and largetooth aspen, balsam poplar, and the three cottonwoods. The most widely distributed is trembling aspen, followed by balsam poplar; both species occur from Newfoundland to Alaska. The largest of the native poplars is black cottonwood; its range covers the lower two thirds of British Columbia and extends well into Alberta to the east in a pattern that follows the natural drainage basins. It also reaches as far north as the Yukon along the coast. This species is in demand for veneer stock. Other cottonwoods — eastern cottonwood and its western form known as plains cottonwood, and narrowleaf cottonwood — have a much more limited distribution.

Hemlocks, ranking fifth in volume of standing timber, have considerable commercial importance. Western hemlock grows plentifully along the Pacific Coast and west of the Rockies in the interior wet belt of British Columbia. It is one of the principal timber-producing species in western Canada and is also an important source of pulpwood. Eastern hemlock is found from the Atlantic to western Ontario, although not in a wide or continuous pattern. It is used to produce a number of products including pulpwood, plywood and lumber. Mountain hemlock is found in British Columbia in parts of the coastal forest and in the heavier rainfall areas of the interior.

Of the six native birches, only two are of commercial importance — yellow birch and white birch. Most abundant is white birch which grows over a vast part of Canada from the Atlantic to the Pacific and extends up to the northern tree limit. One variety, western paper birch, reaches heights of 100 ft and diameters of three feet or more. Yellow birch is a valuable hardwood species used extensively for flooring, veneer and plywood. Its range extends from the Atlantic to Lake Superior.

The native trees commonly known as “cedars” include the arbor-vitae (eastern white cedar and western red cedar), yellow cypress (yellow cedar) and a juniper (eastern red cedar). Together they make up an important group of commercial species. Eastern white cedar is found from Nova Scotia to Manitoba and as far north as James Bay in Quebec and Ontario. Its wood, which is light and resistant to decay, is used for posts, poles, boats and other purposes where timber is exposed to situations favourable to decay. Western red cedar is of major importance in British Columbia where it ranges from the Pacific Coast to the Rocky Mountains. It is used for lumber, exterior siding, shingles, poles and posts, doors, window sashes and other purposes where resistance to decay is required. Yellow cypress — commonly called yellow cedar or Alaska cedar — is found mainly in the Pacific Coast region where it grows down to sea level in the more northerly sections. As it extends farther south, it seeks higher elevations. Its wood, like that of the other cedars, is valued in situations where resistance to decay is needed.

There are 10 native species of maple, six of which are of commercial value. Only two species are known as hard maples, producing wood that is both hard and strong — sugar maple and the closely related black maple. Sugar maple ranges from the Atlantic to Lake Superior, while black maple is found mainly in southern Ontario. Hard maple constitutes one of the most valuable commercial hardwoods in Canada. It is used for furniture, flooring, veneer, quality plywood, turnery and other specialized purposes where strength and hardness are needed. Sugar maple and, to a lesser degree, black maple are tapped for the maple sugar industry. Bigleaf maple is found on the lower Pacific Coast mainland and on Vancouver Island. The wood is only moderately hard and lacks strength but, owing to the limited local supply of hardwoods, this tree is of some importance for furniture and other specialized uses in the immediate area. Red maple and silver maple are eastern species. Red maple ranges from Newfoundland to western Ontario, while silver maple is concentrated mainly in southern Ontario and southwestern Quebec. Their wood is weaker and softer than that of the hard maples and these trees are not important timber producers. The Manitoba maple, ranging from Ontario across the southern parts of Manitoba, Saskatchewan and southeastern Alberta, produces a soft, moderately light wood that is low in strength. It is better known as a shelterbelt tree.

There are three species of larch in Canada. Two of them — eastern larch, better known as tamarack, and western larch — have commercial value. Tamarack is widely distributed from Newfoundland to the British Columbia—Yukon border and reaches far into the Northwest Territories. The wood is used for poles, posts, piling, boxes, crates and pulp. Western larch, found mainly in southeastern British Columbia, is one of the important timber-producing trees of western Canada. The wood, being hard and strong, is used mainly in construction but is also made into flooring, interior and exterior furnishings, and pulp.

Other trees of less commercial significance include oak, ash, beech, elm and basswood. Valuable as the wood of these species may be, it is usually obtainable in limited quantities only. However, the species may have considerable local importance and they also contribute greatly to the forest landscape.

Canada's better known species are the commercially exploited trees, but in the forest all species have a role to play in maintaining the ecological balance, controlling water run-off and

preventing soil erosion, and also in providing a habitat for native fauna and recreational facilities for all who wish to enjoy them.

10.1.1.4 Land use

The Lands Directorate of the Department of the Environment is responsible for investigating national aspects of land-use planning. It provides other agencies with a wide range of land resource data and co-operates with provinces in studies of land use and land-use planning.

The Canada Land Inventory is representative of work undertaken by the Evaluation and Mapping Branch. Under federal-provincial agreement all settled lands of Canada have been classified according to their capabilities for agriculture, forestry, recreation and wildlife. These data are used for land-use planning at the regional level. A computer system has been designed to facilitate use of this information for planning purposes.

The Land-Use Studies and Land-Use Planning Branches are involved in work where there is specific federal or national concern from a lands and environment viewpoint. This work most often involves a multi-disciplinary team and various levels and branches of government.

10.1.2 Forest depletion

The average annual forest depletion by cutting and fire is shown in Table 10.2 for the 10-year period 1962-71. The primary sources of Canada's current wood production are the areas of Crown forest land allocated to wood production and private forest land. These two ownerships constitute 434.8 million acres and, of that area, 1.8 million acres (based on 1968 information), or about two fifths of 1% were cut annually over the period 1964-68. On a volume basis, the average annual depletion from cutting was 3,853 million cubic feet (MM cu ft), which may be compared with an estimated permissible cut on a sustained yield basis of 8,481 MM cu ft from approximately the same areas of Crown and private land. In addition to cutting and fire, extensive forest depletion is caused by insects, diseases and natural mortality but no reliable estimates of these losses, either physical or economic, are available.

A large surplus of timber exists in Canada although there are shortages in some regions and in some species which could be overcome by increased silvicultural and management inputs where such are considered to be economic. Also, greater utilization of individual trees and of certain species could further extend the resource.

A total of 8,227 forest fires occurred across Canada in 1972, destroying 1.9 million acres of valuable forest land (Table 10.3). Despite a 7% increase in fire occurrence, acreage burned was held slightly below that for the 10-year (1962-71) average. However, the two most significant features of the 1972 season were the heavy damages and high firefighting costs; both showed an increase of 60% over the corresponding averages for the previous decade.

Through carelessness and incendiarism, man has been blamed for 69% of all forest fires reported in 1972 (Table 10.4). Lightning accounted for 2,524 fires or 31% of the annual total.

10.1.3 Forest administration

10.1.3.1 Federal forestry programs

The federal government is directly responsible through several departments and agencies for the protection and administration of forest resources in the Yukon Territory and Northwest Territories and on other federal lands such as the national parks, Indian reserves, military areas, and forest experiment stations. In addition, there are important federal responsibilities with respect to the nation's forest resources as a whole. These responsibilities, which relate to forestry research and development and the provision of information and technical services are defined and established by the Forestry Development and Research Act (1966) and the Department of the Environment Act (1970).

The primary federal organization concerned with forestry is the Canadian Forestry Service of the Department of the Environment. Its program covers seven categories: forest policy and program planning; production forestry; environmental and amenity forestry; background research; operations; extension services; and international forestry.

To promote improved management of forest resources and better forest products, the Canadian Forestry Service, through publications, workshops, seminars, etc., disseminates technical information to forest resource and wood processing managers. Forest advisory ser-

vices are provided for federal departments and international agencies, and assessments are also made of operational trials and treatments conducted by resource organizations and industry. In the forest products field, special testing services (unavailable commercially) are provided both for government and industry. The Service also participates in the development of codes and specifications for forest products.

Through its publications, press releases, films, displays, visitor centres and demonstration areas, the Service seeks to increase public awareness and understanding of forest values and to enlist support in the protection and wise use of the forest resource.

10.1.3.2 Provincial forestry programs

All forest land in provincial territory, with the exception of the minor portions in national parks, federal forest experiment stations, military areas and Indian reserves, is administered by the respective provincial governments. The forestry program of each province is outlined below.

Newfoundland. The forest resources of this province are geographically separated by the Strait of Belle Isle into two distinct regions — the island of Newfoundland and Labrador on the mainland. The extent of the resource in Labrador is not fully known and is only now the subject of a forest inventory which will not be completed for a few years. Previous estimates show that, of a total area of 112,826 sq miles in Labrador, approximately 21,000 sq miles are considered productive forest land. The total volume of wood in Labrador has been estimated at 60 to 70 million cords of black spruce and balsam fir. A forest inventory of the island of Newfoundland shows that of a total area of 43,359 sq miles, over 14,000 sq miles are classified as productive forest. This area supports a total gross volume of 99.5 million cunits of softwoods and hardwoods. The principal commercial species of trees are black spruce and balsam fir. White pine, white spruce, and white and yellow birch are of lesser commercial importance.

Forty-nine percent of the productive forest lands on the island has been leased to the pulp and paper industry while 37% remains under the direct jurisdiction of the province. Tenure of the remaining 14% is varied and includes federal and provincial parks, areas held under fee simple grants and municipal ownership.

Responsibility and authority over Crown forests in the province are vested in the Forestry Division of the Department of Forestry and Agriculture. The Division employs more than 200 professional, technical and support staff. Four regions and 13 district offices undertake the operational field work of forest protection, timber surveys, permits, enforcement, scaling, silviculture and forest management. Headquarters at St. John's performs planning and administrative functions. A new forest policy of increased utilization on a sustained yield basis, backed by legislation and forest management, is being implemented following an exhaustive study of all aspects of forestry in the province.

The forest industry in the province consists of two pulp and paper mills located at Grand Falls and Corner Brook, a liner board mill at Stephenville, and a particleboard plant at St. John's. In recent years the sawmill industry has shown signs of expansion but it still falls short of satisfying provincial lumber consumption. The total forest industry is estimated to contribute approximately \$150 million annually to the gross provincial product.

Forest research is principally carried out by the Canadian Forestry Service of the federal Department of the Environment. Post high school education in forestry is available at Memorial University of Newfoundland and at the College of Trades and Technology (CTT). Memorial University offers a two-year diploma course in forestry and is affiliated with the forestry faculty of the University of New Brunswick. At the CTT students may obtain a diploma after successfully completing a two-year forest technology course.

Prince Edward Island. Roughly 45% of Prince Edward Island's 2,184 sq miles of land area is tree-covered. The wooded areas consist of scattered patches throughout the province with the greatest concentration being in the eastern section. All woodland is privately owned except some 50 sq miles of provincially owned forest land.

The Forestry Branch of the Department of Agriculture and Forestry administers all forestry matters in the province — reforestation, protection, extension and woodlot improvement. The reforestation program has been expanding yearly with emphasis on the genetic improvement of the white spruce. As the program progresses, the genetic improvement program will be carried out on all commercially important tree species.

Nova Scotia. Of Nova Scotia's land area of 20,402 sq miles, 15,555 sq miles are classed as forest and most of the forest land is considered suitable for regular harvesting. Although 91% of the forest land in Canada is held by the Crown in the right of the federal and provincial governments, only 22% is so held in Nova Scotia.

Provincial Crown lands are administered by the Department of Lands and Forests through a staff of foresters and rangers. Extension personnel assist owners of small private woodlands. The Department administers the Lands and Forests Act as it pertains to all lands and is responsible for forest fire suppression. Forest fire detection is facilitated through 35 observation towers and a six-plane aerial patrol service. In 1973, 457 fires burned 5,884 acres of forest. Twelve fires exceeded 50 acres, and the largest covered 2,177 acres. Fire suppression crews and rangers with equipment are stationed throughout the province.

The forest industry is of prime importance to the economy of Nova Scotia, contributing directly or indirectly around \$130 million to the gross provincial product annually. There are in operation some 414 sawmills of various types and sizes, one hardboard mill, two newsprint mills, one groundwood pulp mill and one chemical pulp mill. These mills accounted for 36 million cubic feet (MM cu ft) of sawn materials, and consumed just over 85 MM cu ft of pulpwood in 1973, excluding nearly 9 MM cu ft of pulp chips from sawmill residues. In addition, 6.4 MM cu ft of pulpwood were exported and 480 M cu ft of pit props, poles and pilings were produced.

The reforestation program has been active since the 1930s. Experimental work on container planting, direct seeding, soil capability and site preparation continues and efforts are being made to improve seed sources. Total softwood inventory as at July 1973 was 5.3 million seedlings and transplants, and 1.5 million trees were planted.

Timber, pulpwood and Christmas trees are sold through public tender, and cutting on Crown lands is done under recommendation of resource managers of the Department of Lands and Forests. Management cruises, regeneration studies and experimental cuttings are conducted on Crown lands and a program of operating these lands under long-term, integrated-use management plans is under way. During 1972-73, 5,235 acres of Crown forest were thinned and improved bringing the total acreage of Crown silvicultural treatments to 36,800 since 1965.

The provincial forest inventory, a continuous system designed to operate on a seven-year cycle, was in its last year in 1973 and the second inventory cycle had commenced. The province will be covered in 10 years. Aerial colour photography, begun on Cape Breton Island in 1969, is being extended to the remainder of the province. A system of 1,750 permanent sample plots was completed to provide continuing data on growth and drainage.

Forest research is carried on by federal government agencies and by the Nova Scotia Research Foundation. Investigations cover stand improvement, tree nutrition, cutting methods, and insect and disease activities. Extension projects include fire prevention, a province-wide motion picture program, distribution of information on forest and wildlife conservation, promotion of the Christmas tree industry, a hunter safety program, woodlot improvement, preparation of material for the mass media, and technical assistance to sawmill operators.

New Brunswick. Of the total land area of New Brunswick (27,835 sq miles), approximately 87% is classed as forest land suitable for regular harvest of which the Crown, in right of the province, owns about 46%. About 2% is owned by the federal government and the remainder is privately owned. The total volume of standing timber in the province is estimated at 20,400 MM cu ft; coniferous species make up 70% and deciduous species the remainder.

Protection from forest fires, the first requirement for forest conservation, is mainly the responsibility of the Department of Natural Resources which also carries out duties in connection with game management and protection, mines, water, and the administration of provincial Crown lands. A large-scale aerial spraying program to protect balsam fir and spruce from the spruce budworm has been carried on since 1952 by a Crown company sponsored by the federal and provincial governments and by representatives of the forest products industries. Forest management licences authorize operators to cut and remove forest products in accordance with forest management plans and cutting permits. Royalty is paid to the province when products are cut by the licensees.

New Brunswick does not maintain a forest research organization but co-operates with the

Canadian Forestry Service in that field. The University of New Brunswick has also undertaken a small number of forest research projects in co-operation with the National Research Council, the provincial government and other interested organizations.

In the field of education, the University of New Brunswick offers undergraduate and graduate courses in forestry leading to BScF and MScF degrees. It is also responsible for the administration of the Maritime Forest Ranger School in conjunction with the governments of New Brunswick and Nova Scotia and with private industry. The forest extension services of the University assist both government and private agencies in the direction and planning of various forestry extension programs. The provincial Department of Agriculture and Rural Development also provides an expanding extension service to the owners of farm woodlots.

Quebec. Forests with economic potential cover 298,000 sq miles, about 50% of the total area of the province. This forest cover stretches northward to an irregular line near 52°N on the east and 54°N on the west of the province. The forests may be divided into two separate tenure groups — private forests and public forests. Private forests cover an area of 27,900 sq miles. Public forests cover 270,300 sq miles of which 180,200 sq miles are under management; of the remaining 90,000 sq miles, 31,600 sq miles are considered highly productive although still inaccessible. Public forests carry a volume of almost 93,900 MM cu ft of standing timber of various species; private forests contain 16,600 MM cu ft. Coniferous species make up 78% of the total volume. Public forests under management and private forests supply the pulp and paper mills and the sawmills of Quebec. Private forests account for about 25% of the annual cut (about four million cunits). Quebec forests account for approximately 25% of the gross provincial product.

Management of public forests and assistance to private forestry is carried out by the Forestry Branch of the Department of Lands and Forests which controls development and the use of woodlands, and undertakes conservation measures. Principal management controls are: the annual inventory of some 30,000 sq miles of forest land; study and regulation of silvicultural practices for this area and the zoning of the land for its best use; and restoration of lands destined for forestation by replanting or by proper treatment — to achieve this Quebec maintains some 100 million plants in nursery stock. Regulations governing the use of the forests cover operational control, the issuance of permits for establishment of mills and cutting permits, measurement of wood harvested on Crown land, aid to development of private forests, and building and maintenance of forest roads. Through regional conservation groups, this Branch is responsible for forest protection against insects, fire and fungus attack.

Ontario. Forested land in Ontario amounts to 188,334 sq miles, of which 180,588 sq miles are classified as forest land bearing or capable of bearing timber of a commercial character suitable for regular harvest and not withdrawn from such use. About 90% of this forest land is owned by the Crown, administered and managed by the Ontario Ministry of Natural Resources through three main programs: Land Management, Outdoor Recreation and Resource Products.

Principal Divisions with their constituent Branches are: Forests (Forest Research, Forest Management, and Timber Sales); Mines (Geological, Mineral Research, Mineral Resources, Mines Engineering); Fish and Wildlife (Commercial Fish and Fur, Fish and Wildlife Research, Sport Fisheries, and Wildlife); Parks (Historical Sites, Park Management, Park Planning); Finance and Administration (Administrative Services, Financial Management, Information, Legal Services, Northern Affairs, and Personnel); Lands (Lands Administration, Land Use Co-ordination, and Surveys and Mapping); Field Services (Air Service, Forest Fire Control and Engineering Services). There is also a Conservation Authorities Branch and a Policy Research Branch. In order to serve the public more effectively through decentralization to regional and local levels, four groups are established within the Ministry: Resources and Recreation, Lands and Waters, Northern Ontario and Southern Ontario. The first two groups are primarily concerned with policy development while the others are primarily concerned with policy implementation.

The Forest Management Branch is responsible for the regeneration, tending and improvement of the forests on Crown lands, Agreement Forests and private land under The Woodlands Improvement Act. In addition, it has the task of promoting forestry on privately owned lands through its extension program. The Branch operates 10 forest tree nurseries (with supporting tree seed collection, treatment and storage plant) with a current production

target of about 76.7 million trees. Complementing this are up-to-date tree improvement and nursery soil management programs. The Branch, directly or indirectly, supervises all planting projects on Crown lands but regeneration agreements have been signed with all major licensees under which the latter assume responsibility for planting projects and are paid at an agreed rate for work completed. Other work, such as site preparation for planting, may be performed by the companies under the same agreement.

During 1972, 50.0 million nursery-produced trees were planted on about 72,000 acres of Crown and Agreement lands, and 6.0 million tubed seedlings were planted on about 6,000 acres. Other silvicultural treatments included the direct seeding of 21,800 acres, treatment for natural regeneration on 53,600 acres and stand improvement (cleaning, spraying, thinning, pruning, etc.) on 82,800 acres. In all, 236,600 acres of Crown and Agreement lands were silviculturally treated in 1972 to promote regeneration or to improve the forests. Owners of private lands may purchase planting stock for forestry purposes from government nurseries at nominal prices and may also receive free professional advice on any forestry matter, including silviculture, harvesting and marketing. In 1972 (spring and fall), planting stock furnished for private lands totalled 17.9 million units. Under The Woodlands Improvement Act it is possible to have planting and improvement work carried out completely under government direction and mainly at public expense. Since its inception in 1966, the program has provided assistance for 157,600 acres of privately owned land.

For half a century, Ontario has had enabling legislation that permits municipalities and, within the past 20 years conservation authorities, to place abandoned and submarginal agricultural lands to which they have acquired title under agreement with the Ministry, which undertakes to plant and manage the properties for a specified period of between 20 and 50 years. Nearly 250,000 acres under such agreements are managed intensively and the older plantations are receiving regular thinnings. The trees removed are in demand for pulpwood, posts, poles and sawlogs, making the undertakings financially attractive. In addition, properties close to centres of population have acquired tremendous value as recreational areas. Forest pest problems in 1973 were again dominated by the spruce budworm which infested almost 19 million acres, but spraying operations to control this insect were limited to 90,000 acres in three separate high-value local areas. Smaller acreages on Crown lands and lands managed under agreement totalling 14,000 acres were also treated for white pine weevil, pine and spruce sawflies, white grubs, white pine blister rust, annosus root rot, and mice.

The Forest Research Branch provides scientific and technical knowledge for the management of forest lands and is more specifically oriented toward assisting forest management in attaining production targets. Various disciplines including tree ecology and physiology, site and fertilization, tree genetics and breeding, mensuration, silviculture, pest and fire control, economics, equipment design and development are used in combination to solve management problems such as tree improvement, stock production, regeneration and forest tending. Research is carried out throughout Ontario. Headquarters is at Maple and there are four field stations at Thunder Bay, Sault Ste Marie, Dorset and Midhurst.

The Timber Sales Branch co-ordinates and supervises preparation of management plans for Crown management units and approves the plans prepared for company management units. Forest inventory requirements and priorities for such plans are determined by the Branch. As at March 31, 1974, 182 plans (91 Crown units, 31 company units and 60 Agreement Forests) were completed or in process of completion for approximately 190,000 sq miles. Forest access is most important in the implementation of management plans and the forest access roads program is part of the Branch's responsibilities. The Branch arranges for the orderly sale and disposition of timber and the measurement (scale) of the products removed. Sawmills are licensed and directories prepared. Information is collected and analyzed on the production, transportation and marketing of timber and the data provided to the forest industry.

The Forest Fire Control Branch is responsible for the area under organized forest protection in Ontario totalling 180,275 sq miles and including the main central band of accessible forests. This area is organized into eight regions and 38 fire districts. An additional 11 administrative districts are located south of this area in the highly developed agricultural counties where municipalities are responsible for fire control. The vast inaccessible areas to the north of the fire districts, totalling over 134,000 sq miles, do not support significant stands of merchantable timber and, except for communities or other special values, are not protected. Within the fire districts, agreements were in effect in 1973 with 208 municipalities for the prevention and

control of forest fires. An agreement was also in effect with the federal government for fire protection of 968,968 acres of Indian lands in the province.

Organized forest fire detection is accomplished primarily by aerial patrols with a limited amount of backup detection provided by two or three lookout towers in areas of high value (e.g. Algonquin Park and Quetico Park). Public reporting of forest fires (unorganized detection) continues to be an important and very necessary part of the over-all detection program. The basic fire-fighting strike force comprised 130 trained five-man fire crews and 39 fire-bombing aircraft. These forces, with the aid of timber operators, municipal fire brigades and the general public in some instances, provided initial attack on 997 of the 1,000 fires that occurred in 1973. Fire-bombing aircraft provided initial attack on 114 fires dropping 573,600 gal of water and long-term retardant which has proven an effective operational tool. Tracker aircraft spread most of the long-term retardant. Prescribed burning as a silvicultural and hazard reduction tool was continued in 1973 with 25 burns covering 5,013 acres. An integral float tank water-bombing system is installed on float-equipped aircraft. The fleet comprises 44 aircraft of various types including six Tracker air tankers. Four helicopters were leased for four months of the fire season and positioned one in each of the Northwestern, North Central, Northern and Northeastern regions. Smaller helicopters were hired when required. The communications system included a network of ground stations, radiotelephones, fireline radios, aircraft radio installations and portable aircraft radiotelephones.

Manitoba. The administration of provincial Crown forest lands in Manitoba is the responsibility of the Department of Mines, Resources and Environmental Management which consists of a Resources Management Division, a Mines and Departmental Services Division, an Environmental Management Division and a Water Resources Division. A special planning section is charged with developing short- and long-range forestry plans and programs relating to the forest inventory, timber utilization and industrial development, reforestation, silviculture and forest protection.

The Research Branch of the Environmental Management Division undertakes the necessary practical research for the qualitative development of these programs and the various projects and activities within them. The Branch co-operates with several federal services which maintain two research areas in the province and works closely with federal authorities in investigating and controlling forest damage resulting from insects and diseases.

The Resources Management Division is charged with the administration of the Forest Act and Regulations, and the implementation of forestry programs and projects developed. It also provides considerable input with respect to plans developed for specific areas within the four regions into which the province is divided, each headed by a regional director responsible for the field administration of the forests and other resources in the region. Policy guidelines are established by head office which co-ordinates control measures for the propagation, improvement and management of the forests, for the harvest of forest products, and for forest inventory surveys. A provincial forest nursery is maintained to supply stock for reforestation of denuded Crown land and some natural seed areas have been established for nursery stock. Seedlings are supplied to farmers for woodlots and to commercial Christmas tree producers; an average of more than 4 million are planted each year in reforestation projects on Crown lands. Conventional planting programs are being reduced and reforestation of cutover lands is being achieved by scarification and seeding. The program of forest stand improvement comprises thinning, clearing and chemical spraying to remove undesirable species and encourage growth of preferred trees. Forest inventories cover about 10,350 sq miles annually and, on the basis of these inventories, working plans with annual allowable cuts on a management unit basis are in operation.

Timber-cutting rights are awarded by forest management licences, timber sales and, in certain cases (particularly for salvage operations), by timber permits. Forest management licences may be granted for periods of up to 20 years and are renewable; timber sales may be for varying periods from one year upward and timber permits for periods of up to one year. In 1974 one long-term pulpwood berth with an area of 2,745 sq miles was in force. A second long-term pulpwood berth agreement was signed in 1966, covering the construction of a pulpmill and sawmill at The Pas in northern Manitoba.

There are 128,370 sq miles of the province under forest protection with zones of priority established in the less accessible areas. Fires are detected through a comprehensive network of

lookout towers and supporting air and ground patrols. Approximately 90,000 sq miles are covered by aerial patrols.

Public education in the fields of fire prevention and forest conservation is carried out through extensive use of radio, television, newspapers, pamphlets, signs, film tours and talks. The Mines and Departmental Services Division provides accounting and clerical services for the other two divisions, and is responsible for issuing permits, licences and leases relative to forestry projects and activities.

Saskatchewan. The forests of Saskatchewan cover 136,000 sq miles of which 44,500 sq miles are productive forest land and are suitable for regular harvest. Provincial forests constitute approximately 96% of all forest land in the province and are managed and developed by the Forestry Branch of the Department of Tourism and Renewable Resources.

The Forestry Branch, consisting of three sections — forest management, inventory and silviculture — develops and evaluates forest policies and management programs which are carried out by the various regional administrative authorities. For purposes of resource administration, the province is divided into five regions, each directed by a superintendent. The regions are subdivided into conservation officer districts which vary in size according to resource base and population to be served. Close liaison is maintained between the Forestry Branch and the various regional authorities.

The newly formed Department of Northern Saskatchewan administers approximately the northern three quarters of the forested area of the province. The Forest Protection Division of the Resource Development Branch of this Department is responsible for development of techniques in prevention, detection and suppression of forest fires. The Department maintains a forest protection capability in each of its regions.

A network of 75 lookout towers equipped with two-way radios is maintained throughout the province and is supplemented by aircraft on regular patrol duty during high-hazard periods. The Department of Northern Saskatchewan communication system is being converted to VHF. Two-way radio sets, operated in towers, vehicles, aircraft and bush camps, are used for the detection and suppression of forest fires; helicopters and fixed-wing aircraft capable of water-dropping provide aerial support. Outside help may be requested when available and necessary.

Alberta. The 148,167 sq miles of forest lands in Alberta include 106,755 sq miles which are considered productive. The Alberta Forest Service of the Department of Lands and Forests through its six Branches (Administration, Timber Management, Forest Protection, Construction and Maintenance, Land Use and Training) is responsible for their administration. Jurisdiction is decentralized into 10 Forests, each responsible for the forest area within its boundaries. Each Forest is under the control of a superintendent supported by specialists in the fields of timber management, fire, land use, construction and communications, as well as by other clerical and casual staff. These Forests are further subdivided into Ranger Districts under a district forest officer responsible to the superintendent. District officers may have several assistant rangers in addition to other staff under their charge.

The Timber Management Branch is responsible for implementation and supervision of the timber quota system, acceptance and approval of management and annual operating plans prepared for leased and licensed Crown lands, preparation and execution of forest management plans and disposal of Crown timber. The Branch also carries on silvicultural programs, processes applications, takes inventories of forest resources, inspects cutting areas to ensure proper logging and utilization practices and collects dues and fees.

The Forest Protection Branch is in charge of all phases of protection including prevention, detection and suppression of wild fires. This Branch includes a number of specialists such as a meteorologist, a telecommunications officer and an Aircraft Dispatch Section to assist in the over-all protection program. The Construction and Maintenance Branch constructs and maintains all road, airstrip and building facilities within the area of the Service's jurisdiction and administers and operates three licensed public airports.

The Forest Land Use Branch is responsible for the planning and supervision of proper land-use practices in the forested area including grazing, recreation and watershed management, particularly on the east slopes of the Rocky Mountains containing the North and South Saskatchewan rivers. The Forestry Training Branch provides facilities and instructions for the second year of a two-year forest technology course given by the Northern Alberta Institute of

Technology. It also conducts in-service training programs for all the Branches in the Forest Service and other divisions of the Department.

Basic research in all phases of the forestry program is generally carried out by the Canadian Forestry Service. A new federal research laboratory has been completed in Edmonton to improve the research service that is provided.

British Columbia. Over 215,744 sq miles or 60% of British Columbia's total area, is inventoried as forest land. This includes over 276 MM cu ft of mature merchantable timber, most of it coniferous species. Ninety-five percent of the provincial forest land is publicly owned and managed by the British Columbia Forest Service, the forest administrative agency for the province. For administration and management purposes, the province is divided into six forest districts with headquarters at Vancouver, Kamloops, Nelson, Williams Lake, Prince Rupert and Prince George. Further decentralization of authority is effected by subdivision into over 100 ranger districts. Each district is supervised by a forest ranger who supervises the harvesting of trees by logging companies and plays a vital role in environmental protection. Ten directional, servicing or policy-forming divisions constitute the head office of the Forest Service at Victoria: Timber, Reforestation, Protection, Inventory, Research, Engineering, Personnel, Information, Accounts and Grazing.

Efforts continue to bring BC's forest resources under sustained-yield management even though with an annual scale of approximately 24,768,581 cunits (1973) the total inventory would appear sufficient to support current needs in perpetuity. One of the results of sustained-yield administration has been the swinging of a greater proportion of the annual forest harvest to the interior of the province; in 1973, the wet belt forests on the coast accounted for about 46.7% of the total forest cut and the interior for 53.3%. For all practical purposes, the entire interior forest is publicly owned; a large proportion of the privately owned, leased or licensed forests is on the coast. Several systems of timber disposal are in effect. The Tree Farm Licence is a contract between the government and a company or individual whereby the latter agrees to manage, protect and harvest an area of forest land, including any privately held forest land, on a sustained-yield basis. Tree Farm Licences are subject to re-examination for renewal every 21 years. Public Sustained-Yield Units are areas within which the Forest Service manages the Crown timber on a sustained-yield basis. Within the Public Sustained-Yield Units, recognized established logging operators can apply for Timber Sale Licences or Timber Sale Harvesting Licences which entitle them to log at a given rate per year, based on a number of factors including the operator's average rate of production at the time the unit was established.

Forest fire prevention techniques and organization for effective forest fire suppression are vital aspects of planned sustained-yield management. Extensive use is made of aircraft under various terms of contract. Air tankers and fire-spotter aircraft are employed during the fire season and helicopters and other aircraft are employed under contract for patrol duties and for the transport of fire suppression crews. The rugged topography and the many remote and sparsely populated areas of the province demand the availability of a variety of transportation methods to achieve early discovery of and attack on forest fires.

Close liaison with the Canadian Forestry Service of the federal Department of the Environment through facilities at Victoria provides detailed information on insect and fungal enemies of the forest and on fire research.

In order to achieve an orderly and efficient administration of multiple use of Crown forest lands, the Forest Service, in conjunction with other government departments, has recently developed the "Integrated Use" concept. The Forest Service recognizes that inevitably some forest lands will be withdrawn from timber production to accommodate other users. These losses must be offset by increased production on the remaining areas.

10.1.4 Statistics of forest industries

This Section is concerned with the many industries engaged in the felling of timber and its transformation into a variety of products required in modern living. The extensive forests of Canada provide raw materials for several large and growing primary industries: sawmills and planing mills, shingle mills, veneer and plywood mills, particleboard plants and pulp and paper mills, which in their turn provide raw materials for a wide range of secondary industries that convert the products of the primary industries into more highly manufactured goods such as sash, doors, millwork, wooden boxes, furniture, converted papers and paper goods. However, much of the output of the primary forest industries is exported; the sawmill industry and the

pulp and paper industry, especially, contribute substantially to the value of the export trade of Canada and thereby provide an important part of the foreign exchange necessary to pay for the imports from other countries. Statistics of manufacturing activity and total activity of the wood industries and the paper and allied industries will be found in Chapter 17.

10.1.4.1 Logging industry

The forests of Canada provide the raw materials for its sawmills and planing mills, shingle mills, veneer and plywood mills, particleboard plants and pulp and paper mills as well as roundwood for export in the unmanufactured state and other products such as fuelwood, poles and piling, fence posts, mining timber and Christmas trees. Tables 10.5 and 10.6 give the estimated quantities of wood cut in Canada, by province and by type of product, for 1969-71. The total volume of wood cut declined slightly from 4,288 MM cu ft in 1970 to 4,227 MM cu ft in 1971.

10.1.4.2 Wood industries

The standard industrial classification subdivides the wood industries group into the following industries: sawmills and planing mills, shingle mills, veneer and plywood mills, sash, door and other millwork plants, hardwood flooring mills, manufacturers of prefabricated buildings, manufacturers of kitchen cabinets, wooden box factories, the coffin and casket industry and miscellaneous wood industries. The latter group is further subdivided into the wood preservation industry, the wood handles and turning industry, particleboard, and miscellaneous wood industries.

The sawmills and planing mills, the shingle mills, the veneer and plywood mills and the particleboard plants (the latter are included in the miscellaneous wood industries group) use mainly roundwood as a raw material and sometimes are called primary wood industries; they are dealt with separately below. The other industries, which constitute the secondary wood industries, further manufacture part of the production of the primary wood industries into a great variety of products. However, most of the production of the primary wood industries is not further processed.

Sawmill and planing mill industry. Lumber is by far the most important single commodity in this industry and British Columbia is the most important province in this field. The total value of shipments of establishments classified to this industry in 1971 amounted to \$1,395.5 million of which lumber accounted for \$1,159.4 million; shipments of lumber from British Columbia amounted to \$801.3 million (Tables 10.7 - 10.8).

In addition to the lumber produced by the sawmill and planing mill industry a small amount is produced by establishments classified to other industries bringing total lumber production in Canada in 1971 to 12,735 MMfbm compared with 11,263 MMfbm in 1970.

Shingle mill industry. Most of the shingles and shakes produced in Canada are from British Columbia mills. All establishments in this classification reported shipments of 2,243,066 squares of shingles and shakes valued at \$42.7 million in 1971. British Columbia alone accounted for 2,086,600 squares valued at \$41.0 million. However, it should be mentioned that considerable quantities are produced by establishments classified to other industries and by individuals intermittently operating one or two shingle machines or producing shingles by hand; although no adequate measure of this production is available it is known to contribute significantly to the total. Of the total production in 1971, 2,617,891 squares were exported, of which 2,583,327 squares went to the United States.

Veneer and plywood industry. The production of hardwood veneer and plywood in Canada is confined largely to the eastern provinces and the production of softwood veneer and plywood almost entirely to British Columbia. For the latter, Douglas-fir is most commonly utilized because of the availability of large-diameter logs of this species from which large sheets of clear veneer can be obtained. Of the hardwoods, birch is by far the most important species. Although most of the raw materials for this industry are of Canadian origin, some decorative woods are imported, particularly walnut.

Most of the production of softwood veneers is further manufactured into softwood plywood by Canadian mills. Some of the hardwood veneers are also shipped to other veneer and plywood mills in Canada for further manufacture or to other industries such as the furniture industry for veneering purposes but a significant portion is exported. Total exports in

1971 amounted to 1,175.1 MM sq ft valued at \$31.7 million, of which 1,099.4 MM sq ft valued at \$26.5 million went to the United States.

Most of the plywood is consumed in Canada although exports are important. In 1971 these amounted to 47,796 M sq ft of hardwood plywood valued at \$5.3 million and 362,800 M sq ft of softwood plywood valued at \$33.9 million. The greater part of the exports of hardwood plywood went to the United States (44,015 M sq ft valued at \$4.7 million) but most of the softwood plywood exports went to Britain (219,316 M sq ft valued at \$20.4 million). Quantity and value of veneer and plywood shipments for 1969-71 are given in Table 10.9.

10.1.4.3 Paper and allied industries

The standard industrial classification subdivides the paper and allied industries group into the following industries: the pulp and paper industry, the asphalt roofing manufacturers, the paper box and bag manufacturers, and other paper converters. Statistics of manufacturing activity and total activity of the paper and allied industries group are given in Chapter 17.

Pulp and paper industry. This industry is by far the most important of the group. For many years it has been the leading industry in Canada contributing about 2% of the total gross national product and 15.3% of the total value of the country's exports in 1971. In that year there were 142 pulp and paper mills in operation.

These mills consume enormous quantities of roundwood: 15,978,078 cunits with a cost value of \$554.4 million was used in 1971. In that year, 99,368 cunits of pulpwood were imported and 655,793 cunits were exported. In addition, pulp and paper mills use wood residues of the sawmill and other industries for pulping such as cores of peeler logs, slabs and edgings or wood chips, shavings, and recently, sawdust. The total of such wood residues used by the industry in 1971 amounted to the equivalent of 7,404,659 cunits of pulpwood valued at \$189.8 million. The industry also consumes large amounts of electric power, chemicals and other goods and services and requires large quantities of clean water.

Some of the production of the pulp and paper industry is consumed in Canada or serves as a raw material for the paper-using or secondary paper and allied industries and certain other industries but a great part of it is exported, particularly newsprint and various types of pulp, most of it to the United States. Some plants included in the pulp and paper industry classification also convert basic paper and paperboard into more highly manufactured papers, paper goods and boards but their output represents only a small part of Canada's total production of converted papers and boards. Table 10.10 gives shipment and production figures for pulp and Table 10.11 gives shipments of basic paper and paperboard for 1969-71. Table 10.12 shows exports of pulp and newsprint for 1969-72.

Asphalt roofing manufacturers. These establishments produce composition roofing and sheathing, consisting of paper felt saturated with asphalt or tar and, in some cases, coated with a mineral surfacing. Their total shipments in 1971 were valued at \$51 million.

Paper box and bag industries. These industries include manufacturers of folding cartons and set-up boxes, manufacturers of corrugated boxes and manufacturers of paper bags. Their total shipments in 1971 amounted, respectively, to \$195.9 million, \$299.9 million and \$205.1 million, compared with \$182.8 million, \$281.8 million and \$191.8 million, respectively, in 1970.

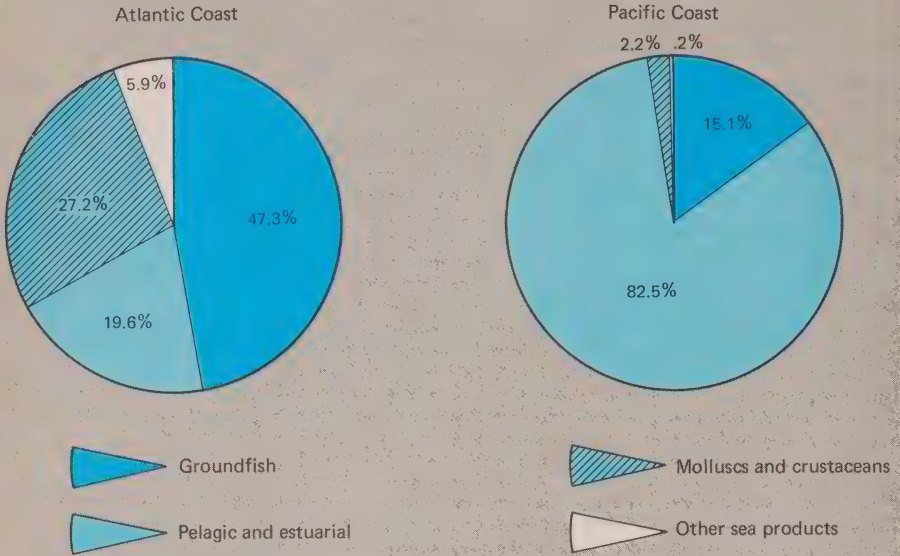
Other paper converters. This group produces a host of paper products such as envelopes, waxed paper, clay-coated and enameled paper and board, aluminum foil laminated with paper or board, paper cups and food trays, facial tissues, sanitary napkins, paper towelling and napkins, toilet tissue, etc. The total value of manufacturing shipments of this industry in 1971 amounted to \$416.4 million compared with \$384.3 million in 1970.

10.2 Fisheries

The federal government has full legislative jurisdiction over the coastal and inland fisheries of Canada and all laws for the protection, conservation and development of these fisheries resources are enacted by Parliament. The management of fisheries is, however, shared with provincial governments to which certain administrative responsibilities have been delegated.

The federal Department of the Environment exercises responsibility for the management of all fisheries, both marine and freshwater, in Nova Scotia, New Brunswick, Newfoundland,

Market value share of fishery products,
by area and type, 1972



Prince Edward Island, the Yukon Territory and Northwest Territories. In Ontario, Manitoba, Saskatchewan and Alberta the management of all fisheries is conducted by the provincial governments. In Quebec, the provincial government manages both marine and freshwater fisheries but the inspection of fish and fishery products produced for sale outside the province is carried out by the federal Department of the Environment, as it is in all other provinces. In British Columbia, the fisheries for marine and anadromous (fish that migrate to the sea from fresh water) species are managed by the Department of the Environment but the provincial government manages its freshwater fisheries. In the national parks the fisheries are managed by the Canadian Wildlife Service, Department of the Environment.

Licences for sport fishing in all provinces are distributed by the respective provincial government which retains all revenues so collected. Sport fishing licences in the Yukon Territory and Northwest Territories are issued by the federal Department of the Environment.

The mutual interest of federal and provincial governments in fisheries problems is recognized in the undertaking of joint studies and programs, frequently on a regional basis. Regional committees have been established in recent years for periodic discussion. Four groups have evolved: the Federal-Provincial Atlantic Fisheries Committee (consisting of representatives from the federal government and from New Brunswick, Newfoundland, Nova Scotia, Prince Edward Island and Quebec); the Federal-Provincial Freshwater Fisheries Committee (representatives from the federal government and Ontario, Alberta, Manitoba and Saskatchewan); the Federal-Provincial Ontario Fisheries Committee; and the Federal-Provincial British Columbia Fisheries Committee. Sub-committees make recommendations for industrial development, research and marketing problems. The main committee in each case co-ordinates, where practicable, all activities in the respective fields of responsibility of its members and suggests means of carrying out fisheries programs and projects of common concern. These include the development of methods and techniques in the catching of fish and of shore and plant facilities, and studies of the economics of fisheries to ensure that any proposed program of development is soundly based.

10.2.1 Federal government activities

The work of the federal government in the conservation, development and general regulation of the nation's coastal and freshwater fisheries is performed by the Fisheries and Marine Service which incorporates the scientific staff and establishments formerly administered by the Fisheries Research Board.

The Fisheries and Marine Service. Canada's Fisheries and Marine Service, a major component of the federal Department of the Environment, undertakes a broad range of responsibilities and activities related to the aquatic environment and the living resources of ocean and inland waters. These include: management of Canada's ocean and inland fisheries; hydrographic surveying and charting of navigable coastal and inland waters; administration of small craft harbours; fisheries and oceanographic research contributing to the understanding, management and optimum utilization of renewable aquatic resources and marine waters; research in support of international agreements relating to fisheries management and marine environmental quality.

Jurisdiction over fisheries is exclusively federal under the British North America Act, 1867, although administrative responsibilities have been delegated over the years to some provinces.

Functions of the Fisheries and Marine Service are grouped under two major units: Fisheries Management, and Ocean and Aquatic Affairs. Co-ordinated by a small corps of senior staff officers at headquarters in Ottawa, the Service carries on most of its programs at regional and field locations from coast to coast. Regional headquarters for Fisheries Management are located at Vancouver, BC; Winnipeg, Man.; Quebec, Que.; Halifax, NS; and St. John's, Nfld.; and for Ocean and Aquatic Affairs at Victoria, BC; Burlington, Ont.; and Dartmouth, NS. Research institutes and laboratories are located at a number of centres across Canada.

In addition, several appointed public corporations and boards are involved in activities closely aligned with those of the Fisheries and Marine Service including the Fisheries Prices Support Board, the Canadian Saltfish Corporation and the Freshwater Fish Marketing Corporation.

International fisheries. Many of the deleterious effects of man on his aquatic resources are outgrowths of historical practice, insufficient knowledge, multiple uses of water, social and economic conditions, and national and international competition. Problems under national control are corrected as conditions warrant but many resources are shared with other nations and must be managed jointly.

Canada co-operates with many other nations in obtaining scientific data and formulating management proposals required to ensure the rational development and conservation of fisheries of common concern through membership in nine international fisheries commissions and one international council. These international organizations are established under the terms of formal conventions and assume responsibility for the investigation of specific living marine resources in the defined areas to which the terms of the respective conventions apply. Canadian representatives on these international bodies are appointed by Order in Council and include officials of the Department of the Environment and members of the fishing industry. Canada is a party to the following: the *Convention between Canada and the United States of America for the Preservation of the Halibut Fishery of the Northern Pacific Ocean and Bering Sea*; the *Convention between Canada and the United States of America for the Protection, Preservation and Extension of the Sockeye Salmon Fisheries in the Fraser River System* (pink salmon added subsequently by protocol); the *International Convention for the High Seas Fisheries of the North Pacific Ocean*; the *Interim Convention on Conservation of North Pacific Fur Seals*; the *International Convention for the Northwest Atlantic Fisheries*; the *Convention on Great Lakes Fisheries between Canada and the United States of America*; the *International Convention for the Regulation of Whaling*; the *Convention between the United States of America and the Republic of Costa Rica for the Establishment of an Inter-America Tropical Tuna Commission*; the *International Council for the Exploration of the Sea*; and the *International Convention for the Conservation of Atlantic Tunas*.

As evidence of its support for international consultation and co-operation in fisheries, Canada maintains active membership in the Committee of Fisheries of the Food and Agriculture Organization of the United Nations and in the Codex Alimentarius Commission which is concerned with world food quality standards.

In addition to co-operating with other nations to conserve high-seas fisheries resources

through international agreements, Canada has taken further action to protect the inshore fisheries in the coastal areas by establishing a 12-mile territorial waters limit and certain defined fishing zones. Canada excludes from these areas the fishing vessels of other nations except those having traditional fishing interests. Agreements have been concluded with Denmark, France, Norway, Portugal and the United Kingdom on the phasing out of fishery operations within Canadian territorial sea and fishing zones. Canada also enters into bilateral agreements as necessary to overcome specific fisheries problems.

10.2.2 Provincial government activities

Newfoundland. The provincial Department of Fisheries is concerned mainly with improvement and development of fishing and production methods. It conducts experiments and demonstrations in new designs of fishing gear as well as the modification of existing types, the construction of multi-purpose fishing craft and the exploration of potential fishing grounds with a view to increasing catching efficiency.

Loans are made to processors for the establishment and expansion of fish processing plants and for deepsea draggers. Aid to fishermen for the construction of modern vessels capable of a greater variety of fishing operations and larger production is provided by loans from the Newfoundland Fisheries Loan Board. The Fishing and Coasting Vessels Rebuilding and Repairs (Bounties) Act, 1958 authorizes financial assistance in maintaining and prolonging the life of the existing fleet. The Coasting Vessels (Bounties) Act, 1959 authorizes the granting, for locally built ships, of a maximum bounty of \$150 a ton for vessels of between 100 and 400 gross tons. The Fishing Ships (Bounties) Act, 1970 authorizes the payment of a bounty of \$200 per registered gross tonnage on boats 10 tons under deck up to 150 tons which are built under permit. An Inshore Fisheries Assistance Programme provides a bounty of \$10 a foot on boats measuring from 20 to 30 ft and \$12.50 a foot on boats measuring 31 to 35 ft. Bounties are also paid to fishermen on certain types of synthetic fibre fishing nets and lines.

Other services include advising fishermen on gear and equipment, industrial research and plant construction and engineering. The Fisheries Salt Act, 1957 and the Fishing Salt Regulations, 1969 authorize rigid control over the sale and distribution of fisheries salt.

The inland waters of Newfoundland, although they provide excellent sport fishing, are not commercially exploited. The lakes and ponds actually remain under the authority of the Department of Tourism but, under federal-provincial agreement, these waters, including rivers and streams, are under federal control in matters of conservation and guardianship.

Prince Edward Island. The sea and inland fisheries of Prince Edward Island are administered by the Fisheries Service of the federal Department of the Environment. The provincial Department of Fisheries supplements federal activity in this area and is concerned principally with quantifying and, within the terms of the provincial role in fisheries management, maximizing returns, both social and economic, to those engaged in the fisheries industry. The Department provides technical assistance and, in conjunction with the federal fisheries organizations, engages in experimental and developmental work in such fields as fishing methods, resource inventories, statistical studies and management assistance.

Loans are made available to fishermen and the fishing industry through the Prince Edward Island Lending Authority, a Crown corporation established in 1969, which is empowered to grant credit in the sectors of fisheries, industry, tourism and agriculture. Provincial responsibilities concerning freshwater fisheries are discharged by the Fish and Wildlife Division of the Department of Environment and Tourism.

Nova Scotia. The landed value of Nova Scotia's commercial fisheries production is approximately \$75 million with a market value after processing and packing of \$150 million. Fishery products account for more than 30% of the value of Nova Scotia's exports. The industry employs more than 11,000 fishermen and more than 4,000 workers in the processing plants. Supporting industries of considerable economic value to Nova Scotia include boatbuilding, ship repairs, and machinery and gear manufacturing. In recognition of the importance of the fisheries in terms of industry, trade, employment and recreation, the provincial government keeps in close touch with the federal authorities responsible for administration and management of the resources and works in co-operation with them in promoting sound utilization and development.

The Nova Scotia Department of Fisheries concentrates most of its efforts on training

fishermen and on resource development. It operates a Fisheries Training Centre in Pictou providing year-round facilities for all commercial fishermen and it conducts a program of short courses for inshore fishermen in selected fishing communities throughout the province. The principal subjects of instruction are engines, navigation, and nets and gear. The Resource Development Division organizes and conducts exploratory fishing for new resources and studies and introduces new improved gear and methods to the industry. Work has been carried out on "off-bottom" methods of rearing oysters and mussels. An oyster hatchery went into production in 1971 which will facilitate studies and rearing trials with other shellfish species. Recently a program of product development has been initiated with provision for technical and financial assistance for processing and marketing trials with under-utilized species of fish and shellfish and with products not previously produced.

The Department is adding a staff of field representatives to improve communications between fishermen, industry and government and to assist fishermen to cope with business management and technical problems. Loans are made available to fishermen and to the fishing and fish processing industries through the Nova Scotia Resources Development Board, a branch of the Nova Scotia Department of Development.

In recent years, Nova Scotia, through the Wildlife Conservation Division of its Department of Lands and Forests, has spent a considerable sum on management and investigation in certain lakes and streams in the province with a view to improving the freshwater sport fishery. The Division employs a full-time fisheries biologist. A continuing program of lake and stream investigations was begun in 1961 to obtain information useful in formulating a fish management program. A federal-provincial program of socio-economic surveys of the freshwater and saltwater sport fishery resources was begun in the spring of 1974. A system of rearing ponds, capable of producing 100,000 yearling speckled trout annually, has been established on the Moser River in Halifax County and several projects dealing with reclamation, rainbow trout and smallmouth bass are being conducted.

The Nova Scotia Department of Tourism is active in the promotion of saltwater sport fishing. In conjunction with the provincial Department of Fisheries and the federal Department of Manpower and Immigration it arranges courses for captains contemplating the establishment of charter services, awards prizes to sportsmen with the largest tuna and bass catches of the season, sponsors the International Tuna Cup Match and the International University Sports Fish Seminar and publishes a brochure listing charter boats available in the province.

New Brunswick. Commercial fishing is one of the most important basic industries of New Brunswick employing about 5,163 fishermen, with annual earnings of \$22 million, and 5,600 plant workers. The annual marketed value of all fish and shellfish products is about \$95 million of which about 80% is exported to the US. New Brunswick's commercial fisheries, both tidal and inland, are under the legislative jurisdiction of the federal government, while angling in Crown waters is the responsibility of the provincial Department of Natural Resources. However, the New Brunswick government plays a major role in resource assessment and development, fisheries training, financial assistance to the industry and long-term planning. The Department of Fisheries and Environment has a highly qualified staff of biologists, engineers and naval architects, grouped into six branches. Close liaison is maintained with other federal and provincial departments and agencies concerned with the fishing industry of the province.

Under the Fisheries Division of the Department, the Fish Inspection and Marketing Branch administers the New Brunswick Fish Inspection Act and Regulations although for greater effectiveness and to avoid duplication of personnel, arrangements have been made with the federal Department of the Environment to cover this activity. The Branch actively promotes the expansion and modernization of existing fish processing plants and the establishment of new plants in the province. Its efforts include studying existing markets and developing new ones for fishery products at home and abroad in collaboration with other government agencies, federal and provincial.

The Research and Development Branch carries out programs in co-operation with the federal Department of the Environment. Technical and financial assistance is made available to the provincial department for projects undertaken toward modernizing fishing and processing methods, experimenting with new types of fish-catching equipment and demonstrating its operation to fishermen, and exploring and developing hitherto unexploited or under-exploited

species of molluscs, crustaceans, fishes and seaweeds. This work has resulted in the establishment of snow crab, shrimp, Irish moss, tuna, sea urchin and eel fisheries in New Brunswick.

The newly created Fisheries Training Branch provides technical training to fishermen and plant personnel of the province. In addition, training is also provided for managerial and supervisory personnel. The Branch operates a School of Fisheries at Caraquet in northeastern New Brunswick where, in the 1972-73 academic year, 603 fishermen took training in the various phases of their trade.

The Fishermen's Loan Board of New Brunswick, a body corporate operating under the jurisdiction of the Minister of Fisheries and Environment, was established in 1946. It now operates under the Fishermen's Loan Act of 1952 and the Regulations of November 1, 1963. The Board consists of two major branches: the Loans Administration Branch and the Boat Building Branch. Both branches have three sections; the former includes the credit, accounting and field staff sections (which covers all the coastal regions of the province); the latter consists of the vessel inspection, evaluation and contracts section. The Board's main function is to make loans available to the fishing industry of the province for the modernization and development of the fishing fleet. It does this by providing adequate financial assistance at moderate rates of interest to fishermen, either as individuals or associations, processing firms and corporations for the construction of modern fishing vessels, financing major repairs, and for the purchase of engines and equipment.

The Loans Administration Branch investigates loan applications, assesses their economic viability, secures loans with insurance and legal documentation, maintains the accounts, and collects the repayment. The Boat Building and Repairing Branch studies, inspects, modifies and approves plans and specifications of the many types and classes of fishing vessels financed by the Board.

Since the Board's inception, it has granted 2,928 loans to New Brunswick fishermen for a total of over \$44.1 million. Outstanding loans amounted to \$19.6 million at the end of March 1974. Loans are repayable within five to eight years on most small inshore fishing vessels. Repayment schedules on large trawlers may extend to 15 years based on the gross proceeds of the catch. Others are on a 15-year annual instalment contract. Most of the new fishing vessels being built for fishermen and processing firms in the province, are financed by the Board. The Board acts as agent for Environment Canada's financial assistance program which makes funds available to owners of new fishing vessels not eligible for the shipbuilding subsidy granted by the Department of Industry, Trade and Commerce.

Sport fishing contributes substantially to the economy of the province. Great Atlantic salmon rivers like the Miramichi, the Restigouche and the Saint John are known around the world for their prolific production of this majestic game fish and attract many thousands of tourists to the province each year. Anglers catch as many as 50,000 salmon a year in the Miramichi system alone. Many other species are also sought after by both residents and non-residents in the hundreds of streams, rivers, and lakes of the province.

Quebec. The commercial fisheries are of great importance to the economy of Quebec. Fishing is the main industry of the Magdalene Islands and of the lower North Shore and it is one of the most important industries in the Gaspé peninsula. In 1973 Quebec fishermen landed 161 million lb. of fish and shellfish. The landed value returned \$12.9 million to the fishermen and the market value of the processed product reached \$34.5 million. This value is more than double that of five years ago (15.5 million in 1968) and more than four times that of 1961 (\$7.6 million). The sea fisheries employ 5,000 fishermen, 1,500 of whom are professionals; in addition some 40 processing plants employ 3,000 workers. Fishermen and ship chandlers build and repair fishing craft bringing employment to the ship-building industry. Local labour is used for the building and maintenance of a variety of sea installations necessary for docking, safety and landing of boats, ice-making services, freezing plants and warehouses.

In 1973 redfish (44.3%), cod (24.4%) and herring (17.3%) made up 86% of the total catch. In terms of value the proportions were: cod, 28%; lobster, 16%; redfish, 28.7%; scallops, crab and shrimp, 10%. The ocean-going fishing fleet consists of 138 wooden or steel seiners of between 15 and 150 tons and 3,205 boats of all types, of which 650 are used by professional fishermen. Government grants and loans to modernize the seagoing fleet aided in the construction of four 130-ft steel seiners in 1972 and 1973 and the building of a dozen draggers and smaller inshore craft. Government aid takes the form of loans for building and refitting of

boats, grants toward the purchase of coastal craft and fishing gear, and technical aid of various kinds. Grants for construction of boats and the purchase of fishing gear totalled \$1.5 million in 1973. Interest-free loans totalling \$2.9 million were made for building repairs to fishing boats.

The main aim of the Marine Fisheries Branch of the Department of Industry and Commerce under the Canada-Quebec Agreement is to increase the efficiency of both the public and private sectors of the industry by concentrating the fisheries in centres with well-equipped port facilities. The Branch included, in the first Agreement of 1968, \$4.8 million for development of basic infrastructures for the fisheries, an amount that was raised to \$10 million in the re-negotiated Agreement. This program is expected to be completed in 1977.

Sport fishing in the inland waters of Quebec is under the jurisdiction of the Department of Tourism, Fish and Game, which employs 543 full-time conservation officers and issues the required sport-fishing licences. Seven hatcheries are maintained by the Department, where speckled trout, brown trout, rainbow trout, grey trout, ouananiche, maskinonge and salmon are reared for the restocking of lakes and streams.

Excellent fishing may be found in all provincial parks and reserves. Gaspé and Laurentide parks are renowned for trout fishing, and the waters of Chibougamau Reserve and La Vérendrye Park, situated on the height of land, abound in pickerel, pike and grey trout. Eleven salmon rivers are open to anglers — the Petit Saguenay, Laval, Moisie, Matane, Cap Chat, Ste. Anne, St. Jean, Matapédia, Darmouth, Port Daniel and Petite Cascapédia.

A committee made up of directors of the Quebec Wildlife Federation makes recommendations to the provincial government concerning legislation required for the maintenance of satisfactory fishing conditions and other problems arising out of the ever-changing conditions of modern life and their effect on the wildlife of the province.

Ontario. The fishery resources of Ontario are administered by the Commercial Fish and Fur Branch and the Sport Fisheries Branch of the Ministry of Natural Resources under the authority of the federal Fisheries Act, the Ontario Fishery Regulations, the Ontario Game and Fish Act and the regulations connected therewith.

The commercial freshwater fishing industry in Ontario, with a capital value of over \$12 million, produces an annual yield of from 53 million lb. to 72 million lb. of fish including nearly 10 million lb. of bait fish. Fishermen receive \$12 million from the sale of this catch. It is estimated that subsequent handling, processing and servicing of fish will result in a contribution of about \$25 million to the provincial economy. The industry, although widely scattered throughout the province, is centred chiefly on the Great Lakes, particularly Lake Erie. Direct employment is provided for about 1,900 commercial food-fish fishermen and 2,500 bait-fish fishermen directly; many more are employed indirectly. Approximately 900 additional people are engaged in fish handling and processing. The species harvested commercially include yellow perch, smelt, whitefish, pickerel, pike, lake trout, herring, chub, carp, white perch, sturgeon, white bass, bullhead, catfish, eel, goldeye, sunfish, burbot, freshwater drum, rock bass, crappie, sauger and suckers. Over 90% of all fish landed in Ontario are harvested from the Great Lakes. More than 500 smaller inland lakes are commercially fished, mainly those in the northwestern portion of the province.

Fishing methods and equipment have been modernized extensively during the past few years and include the use of diesel-driven steel-hull tugs with depth sounding devices, radar and ship-to-ship and ship-to-shore communications. Knowledge of the fish and their movements is constantly being expanded from biological research findings. Modern icing facilities and transportation methods are in use as well as new types of fishing gear. Programs to develop more efficient and economical fishing and processing techniques have resulted in efficient bulk-handling techniques for smelt and a viable fish-meal plant which produces a marketable product from fish-processing wastes and fish unsuitable for food. Trawling on Lake Erie has proved very efficient in harvesting smelt on a year-round basis. Most Ontario fishermen are organized into various local associations and many of these associations are in turn represented by the Ontario Council of Commercial Fisheries which performs important services to the industry.

Ontario has an estimated freshwater area of approximately 68,490 sq miles. Excellent angling opportunities are available for such prized fish as brook, rainbow and lake trout, yellow pickerel (walleye), smallmouth and largemouth bass, northern pike, and maskinonge. Recreational angling is no longer restricted to open water, a wide selection of ice-angling equipment

including snowmobile rentals is available and seasons have been extended in many parts of the province for certain species of fish to facilitate winter angling. Annual revenue from the sale of angling licences in 1973 was approximately \$4.5 million. Residents do not require an angling licence. Non-residents (alien) are required to purchase (1974) a seasonal licence at \$8.50 or a three-day licence at \$5.00 for angling privileges. Canadian residents from other provinces may fish in Ontario for an annual fee of \$3.00. The management of this resource is administered by a field staff of conservation officers and biologists.

Ontario operates 16 fish hatcheries and rearing stations; notably for brook, rainbow and lake trout, splake, smallmouth and largemouth bass and maskinonge. The basic aim of the hatcheries is the economic production of high-quality species to sustain and develop recreational fishing throughout the province. Studies are conducted on the improvement of transportation and planting techniques to improve survival and returns to the angler including the use of aircraft and trucks. The marking of hatchery fish by removal of a single fin is providing valuable information on survival of fish stocks and angler success, 150 fish sanctuaries provide protection during spawning. Research programs are directed toward specific fisheries management problems in the Great Lakes and in the smaller inland waters.

Manitoba. Manitoba's interior location belies the importance of its fisheries resources which stem from an abundance of fresh water in about 40,000 sq miles of lakes and streams covering 16% of the area of the province.

In the year ended March 31, 1973, the commercial fishery produced 20 million lb. of fish, a 36.0% increase from the 12.8 million lb. of the previous year. The value to the fishermen increased \$2.4 million to \$4.7 million. Lake Winnipeg contributed 7.1 million lb. (36%), followed by northern waters with 6.2 million lb. (31%), Lake Winnipegosis with 4.1 million lb. (21%), Lake Manitoba with 2.2 million lb. (11%), and other southern lakes with 0.5 million lb. (1%). The production from Lake Winnipeg increased by 5.7 million lb. as a result of the lake reopening after the closure for mercury pollution. Sixteen species or groups of species normally enter into the commercial catch but only a few species predominate. In 1972-73, whitefish contributed 5.7 million lb., pike 2.9 million lb., walleye (pickerel) 3.6 million lb. and sauger 3.1 million lb. A miscellany of species, primarily suckers and carp, contributed 4.6 million lb. All of the commercial catch is marketed by the Freshwater Fish Marketing Corporation, a federal Crown agency, and is exported mainly to the United States. Gill-nets are the main fishing gear. About 2,304 fishermen were employed during the open-water fishing and 1,683 took part in winter fishing.

Fisheries administration is under the control of the Department of Mines, Resources and Environmental Management and is divided into research, program development and field operations sectors. Field operations are divided among four regional units. Conservation officers enforce both the commercial and the angling regulations and carry out numerous other duties in connection with fisheries management. Professional biologists carry out a continuing program of studies which not only monitor the resource but also extend the knowledge of it. Fish culture plays an important role in fisheries management. Pickerel hatcheries are located on Lakes Winnipegosis and Manitoba. A hatchery is located at Grand Rapids on Lake Winnipeg. A trout hatchery is located in the Whiteshell Provincial Park. Two temporary facilities for collection of spawn are also used.

The sport fishery is an important use of the fishery resource, with walleye, pike, perch and several kinds of trout being the principal sport species. A total of 149,545 angling licences were sold in 1972-73 of which 117,621 were purchased by Canadian residents.

Saskatchewan. The Fisheries and Wildlife Branch of the Department of Natural Resources is responsible for administration of the fisheries resources of Saskatchewan. The Fisheries Section, with head office in Prince Albert, is charged with planning and developing policies and programs to ensure proper management and utilization of the fisheries and administration of both the federal and provincial Fisheries Acts and Regulations. The over-all objective is to encourage efficient multi-use of the fishery, taking into consideration the interests of the various groups wishing to use the resource.

During 1972, 2,585 fishermen obtained commercial fishing licences to fish 221 lakes. The resulting harvest of 10.5 million lb. was worth \$1.6 million to the fishermen. The industry, although widely scattered, is centred chiefly in the northern half of the province; approximately 75% of the production came from northern waters. In order of market value, the

species composition of the catch was whitefish, walleye, pike, lake trout and tullibee.

Three shallow saline lakes in southern Saskatchewan produced 172,212 lb. of brine shrimp and brine shrimp eggs. These are processed for sale to fish hobbyists. An estimated 1 million lb. of rough fish were utilized by nine mink ranches; another 940,000 lb. were shipped to Manitoba for mink ranch use. Interest continues to grow in fish farming. In 1972, 934 fish farming enterprises were licensed to raise rainbow trout. The majority of operations, however, were intended for the private use of the owner. In spite of an estimated 115,000 lb. harvest, this form of aqua-culture is still in the experimental stages in the prairie region.

In 1972, 152,073 angling licences were sold. Northern pike, walleye, lake trout, perch, arctic grayling, rainbow trout and goldeye continued to be the principal species taken. A continuous program of inventory of sport fishing stocks is maintained to provide up-to-date information for management purposes. During 1972, 228 waters were examined. Expansion of the exotic species program continued with varying combinations of brook, rainbow, and splake trout released in three new waters in 1972. About 120 lakes and streams have been stocked with trout and salmon to date.

The provincial hatchery at Fort Qu'Appelle reared 21.1 million fish of nine species for distribution in 127 waters. Whitefish and walleye were the species most widely distributed, being stocked in three and 22 waters, respectively. Rainbow and brook trout were stocked in 39 waters each.

The limnological and fisheries research program is designed to provide basic information on the productivity of water bodies, to secure information on the abundance and relationship of fish species and to investigate and assess factors affecting fish populations. This information is subsequently used to develop fishery management policies and programs.

Alberta. Commercial and sport fishing are administered by the Fish and Wildlife Division of the Department of Lands and Forests, under the authority of the Fisheries Act (Canada) and the Fish Marketing Act (Alberta).

Production of commercial fish from Alberta's 6,485 sq miles of fresh water for the fiscal year ended March 31, 1973 was 4.8 million lb., a decrease from that of the previous year. The landed value of the catch was \$727,082 compared to \$729,931 in 1971-72 and the market value \$1.47 million compared to \$1.4 million. Lake whitefish is the most valuable species caught commercially and accounted for 72% of the total value but represented only 45% of the total landings. Pike remained in second place in market value. Tullibee, used primarily for animal food, stayed in third place and other species taken in order of market value were walleye, perch, ling, suckers, lake trout and goldeye. A major part of the quantity of fish taken is marketed outside the province, mainly in the United States, by the Freshwater Fish Marketing Corporation.

There were 175,253 angling licences sold in Alberta in 1972-73 of which 171,863 were to residents and non-resident Canadians and 3,390 to non-resident non-Canadians. There were 806 Trophy Lake licences and 438 spear fishing licences sold during the same time period. In 1972 a total of 184 lakes were stocked with nearly 5.2 million fish and fish eggs: 63% rainbow trout, 19% eyed walleye eggs, 7% eastern brook trout, 5% walleye fry, 2% kokanee, 1% coho salmon and the remainder in brown and cutthroat trout. There were 465 private and 23 commercial game fish farm licences issued in 1972-73 and these operations handled 300,000 rainbow trout.

Fisheries in Alberta are administered on a regional basis, with six fisheries biologists located in various centres of the province and responsible for a specific geographical area. In addition to the regional staff, there is a research group located in Edmonton consisting of two biologists and a technician, as well as an Aquatic Habitat Protection Group consisting of one biologist and one technician.

British Columbia. A Fisheries Office, which was organized in 1901-02 and became very active in fish culture work, building and operating fish hatcheries and instituting scientific research into various fishery problems, was superseded in 1947 by the Department of Fisheries. This was replaced in 1957 by the Department of Recreation and Conservation, with the Commercial Fisheries Branch now being the provincial organization concerned with commercial fisheries. Administrative and regulatory jurisdiction over the fisheries of British Columbia rests with the federal authority; the ownership of the fisheries in the non-tidal waters is vested in the Crown in the right of the province, as are the shell fisheries such as oyster fishing and clam fishing in tidal waters. The province administers these fisheries although the regulations cover-

ing them are made under federal Order in Council on the advice and recommendation of the province.

The provincial Fisheries Act provides for the taxation of the fisheries and, under civil and property rights, for the regulation and control of the various fish processing plants under a system of licensing. The commercial harvesting of oysters and marine aquatic plants is regulated by provincial permits and licences. Provision is also made for arbitration of disputes regarding fish prices that may arise between the fishermen and operators of the various licensed plants. The administration of the Act involves the collection of revenue and the supervision of plant operations.

Regulation and administration of net fishing in the non-tidal waters of the province, including commercial fishing and authority for regulation of the game fisheries in non-tidal waters is vested in the Fish and Wildlife Branch which operates a number of trout hatcheries and egg-taking stations for restocking purposes.

The Branch co-operates closely with the Fisheries Research Board of Canada. The biological research into those species of shellfish over which the province has control, principally oysters and clams as well as marine plants, is conducted by the Fisheries Research Board of Canada at the Pacific Biological Station, Nanaimo, BC, under agreement with the federal and provincial authorities. The object of this research is to encourage the industry to produce better products more economically and to enable the Commercial Fisheries Branch to regulate the various species so that maximum exploitation may be obtained on a sustained-yield basis.

10.2.3 Statistics of the fishing industry

Commercial fishing in Canada provides employment for some 57,000 persons on a full-time or seasonal basis and contributes approximately \$540 million annually to the nation's economy (Tables 10.13 - 10.14). On the Atlantic Coast, Canada's commercial fisheries concentrate on stocks of cod, redfish, haddock, small flatfishes and herring, as well as valuable shellfish resources, notably lobsters, oysters and scallops. Pacific Coast fisheries are based principally on salmon and halibut; herring stocks, once plentiful, are recovering from a sharp decline in the late 1960s which necessitated closure of the fishery except for catches used for human consumption. The large freshwater lakes of Canada's interior produce important supplies of whitefish, perch, pickerel, trout and pike.

Total earnings by Canadian fishermen on both the Atlantic and Pacific coasts were at record high levels in 1972 despite a decline in total fish landings to the lowest level in 10 years. The domestic and world demand for fishery products was high and, because of strong prices, the market value of Canada's fishery products in 1972 reached a record of \$546 million.

10.2.3.1 Fish landings

Canadian commercial landings of fish and shellfish during 1972 were 2,303 million lb., a decrease of about 9% from 1971. Atlantic Coast landings were below the 1971 levels by 15% while Pacific Coast landings were up by 47%. The total value of Canadian landings was \$233.3 million, an increase of 16% over the previous year (Table 10.15).

Atlantic Coast. Landings on the Atlantic Coast continued declining to 1,871 million lb., a decrease of 16% from 1971. The decline was mainly caused by diminishing stocks of fish but also by adverse weather conditions at the beginning of the season. Atlantic Coast fishermen received a record \$142 million for their catch compared to \$129 million in 1971 (Table 10.16).

Groundfish landings accounted for 1,046 million lb. of the total, 8% less than in 1971. Cod and haddock, two major species in this group, have been declining since 1968 and dropped an additional 14% in 1972 from 1971 levels to a combined total of 434.2 million lb. Similarly, herring landings have been declining since their peak year of 1968 reaching 670.3 million lb. in 1972 valued at \$12.7 million or 4% less than the amount fishermen received in 1971. Lobster landings at 33.2 million lb. in 1972 were 13% lower than in 1971. Prices to fishermen were, however, much higher than 1971 and, as a result, even with lower landings, gross earnings to fishermen reached an over-all high of \$37.0 million, 11% higher than in 1971. The downward trend in scallop landings levelled off in 1972 at 12 million lb., a 7.8% increase over 1971. Again, higher prices enabled fishermen to gross \$19.5 million, 50% above the previous year, for an all-time high.

Pacific Coast. The 1972 landings of fish and shellfish on the Pacific Coast of 337.5 million lb. valued at \$75.1 million, were above the previous year by 47.5% in quantity and 28% in value.

Landed values in 1972 reached a record high of 24% over the previous record high set in 1966 with the increase resulting from greatly improved salmon landings and increased herring quotas.

Salmon landings reached 164.4 million lb., an increase of roughly 24% compared with the 1971 landings and with the five-year average of 1967-71. Salmon landings were valued at \$50.3 million in 1972, an increase of 13% over 1971. Chum comprised 40% of the catch, pinks 24%, coho 13% and sockeye 13%. The scarcity of halibut observed in 1971 worsened in 1972 with landings dropping to 22.1 million lb. a decrease of 13% from 1971. However, prices were exceptionally good, to the point that value to fishermen increased by 68% to \$13.7 million. The ban on herring fishing for reduction purposes remained in effect during the year but higher quotas were allowed for fishing for food purposes and the production of roe reached 86.0 million lb. for an estimated value of \$2.7 million.

10.2.3.2 Products and marketing

The market value of Canada's fishery products reached a new record high of \$546 million, an increase of almost 18% from 1971 (Table 10.17). On the Atlantic Coast, as a group, molluscs and crustaceans showed the largest increase rising 17.5%, exceeding groundfish by 3.3%. Within these groups, scallops, and flounder and sole showed the most dramatic increases of 42% and 23%, respectively.

On the Pacific Coast, the value of marketed products rose 32.4% in 1972 in sharp contrast to a modest decline in 1971. Salmon and herring both recorded sizable increases in 1972 accounting for most of the over-all Pacific Coast rise and in the case of salmon reversing the previous year's \$2.7 million decline and the largest Pacific Coast drop for a species. Canada's Pacific salmon pack in 1972 at 1.2 million cases (48 lb.) was 16.5% lower than in 1971 and 12% lower than the five-year 1967-71 average. Only the production of chum was higher than in 1971, increasing from 98,508 to 278,451 cases; every other species declined (Table 10.18).

The total value of all Atlantic Coast freezings in 1972 increased a modest 8% over 1971 as the poundage frozen declined by the same percentage. All species showed price increases averaging 17.5% (Table 10.19).

10.3 The fur industry

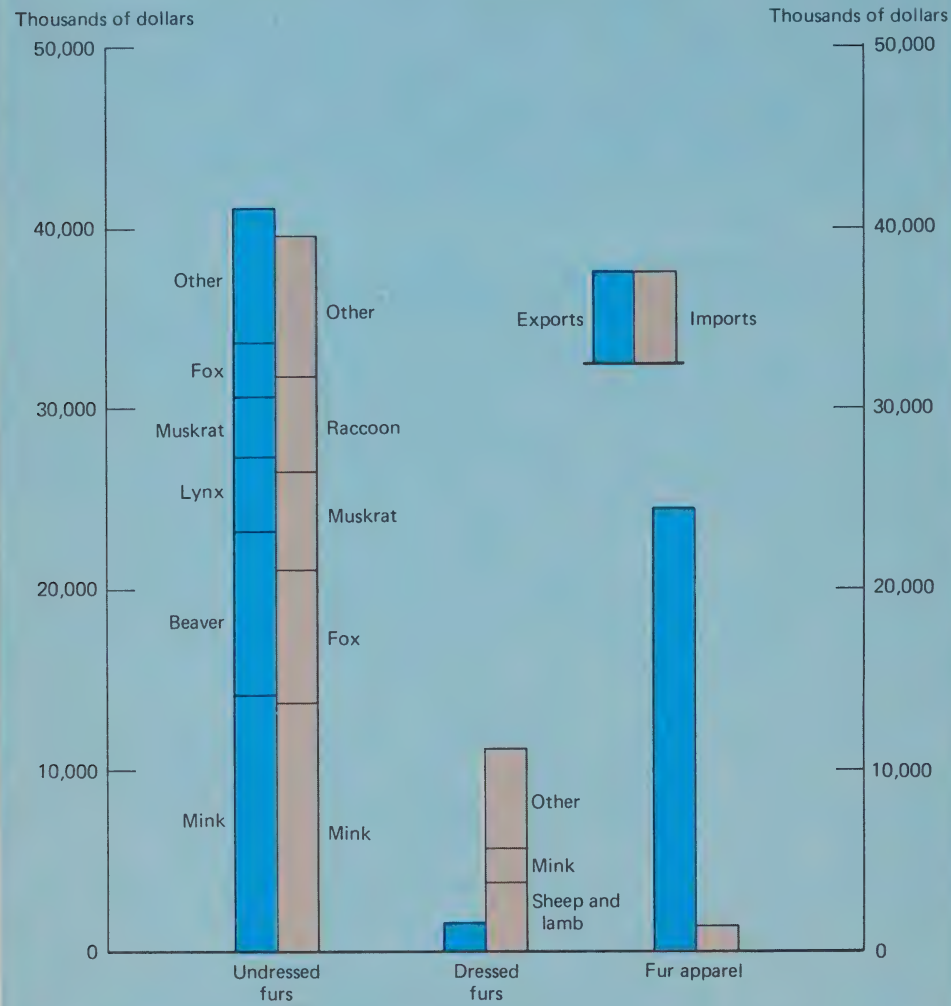
The value of the 1972-73 Canadian production of raw furs amounted to \$46.6 million, made up of \$29.9 million (64%) wildlife pelts, and \$16.7 million (36%) pelts produced on farms (Tables 10.20 - 10.21). This is 42.5% above the 1971-72 level of \$32.7 million, an increase resulting from sharply higher values for most types of pelts.

Fur trapping. In 1972-73 the principal producers of wild furs were: Ontario (24%), Alberta (22.3%), Manitoba (12.4%), Saskatchewan (12.4%) and Quebec (10.6%). The strengthening trend observed in the previous marketing season was maintained in 1972-73 and throughout the season there was an active movement of furs in all trade channels. Prior to the 1972-73 season, the annual value of production of wild furs in recent years had ranged between \$13 million and \$18 million. However, although the relative value of fur trapping in the Canadian economy has declined through the years, returns from this enterprise continue to make an important contribution in the northern areas where wage employment is limited or non-existent.

Management of the fur resource on a renewable basis is of prime importance if the flow of furs is to be maintained. In this respect, conservation policies by federal, provincial and territorial governments have been highly effective and statistics, maintained since 1919, indicate that production of all the important species is being well maintained. In this connection it should be noted that pelt production figures cannot be regarded as an infallible basis for an assessment of the fur bearer population. The number of pelts taken in any one season depend on many factors including the abundance or otherwise of fur bearers, including cyclic species, plus economic factors such as fur prices and the availability of alternative sources of revenue in the northern areas. Nevertheless, in the absence of any inventory of the fur bearers, pelt production data, maintained over a number of years, provide an indication of the status of the wildlife population. Any long-term decline in numbers would certainly be reflected in progressively smaller catches of any given species. Certainly in no case does the seed stock appear to be endangered.

Since at least 1950, trapline coverage, on a cross-country basis, has tended to be incomplete and pelt production figures for many species do not represent optimum harvests.

Fur exports and imports, 1972-73 fur season



Notwithstanding the spottier trapping coverage, pelt production figures in recent years compare favourably with the output in the 1920s and 1930s.

Fur farming. In 1972 Canadian mink ranchers produced 1 million pelts on 614 farms located in all provinces except Newfoundland for a value of \$16.7 million (Table 10.22). The principal producers of pelts, in order of importance, were Ontario (39.9%), British Columbia (17.9%), Alberta (10.4%), Quebec (10.3%), and Nova Scotia (9.9%). The average value of the 1972 pelts was \$16.01, up 26% from the 1971 average of \$12.67. The 1972 production was approximately 10% below the 1971 output, continuing a decline that commenced in 1968. World production of mink has also declined and, with mink still the dominant fur of the industry, it is hoped that the more manageable quantities now being produced will result in a continuing firm market situation. Despite steadily increasing production costs, 1972 returns to mink ranchers were below levels prevailing throughout most of the 1950s, and mink ranching remains viable mainly because it has become a vastly more efficient operation in recent years. The trend toward larger enterprises has encouraged the use of labour-saving machinery, and

better management practices have put the industry on a sounder economic basis. This, together with a steady improvement in the size and quality of the pelts produced has made it possible to offset at least part of the higher production costs. This improvement in the ranching operation is continuing and, hopefully, future gains in productivity will help to offset costs which can be expected to continue to rise.

Encouraged by a stronger market, the production of ranched fox pelts increased slightly from 1,405 pelts in 1971 to 1,473 pelts in 1972. Average values increased also, from \$39.11 in 1971 to \$66.60 in 1972, reflecting the strong interest in all long-haired furs.

Chinchilla are also raised on farms in Canada, but because of the small numbers involved the collection of statistics on this species has been discontinued.

Fur marketing. Canada's trade in furs is, understandably, being affected by the increased value of the annual production and the general buoyancy of the world market for furs. In 1972-73 exports of raw furs were valued at \$41.2 million, up from \$29.8 million in 1971-72 (Table 10.23). The principal species exported were mink (\$14.0 million), beaver (\$9.2 million), lynx (\$4.1 million), muskrat (\$3.3 million) and fox (\$3.0 million).

10.4 Wildlife

Wildlife is an important renewable natural resource. The original inhabitants of what is now Canada depended on it for food and clothing and still do in some remote areas. The coming of the Europeans brought development of the fur trade which guided the course of exploration and settlement. When the country was being opened up, a number of mammals and birds became seriously depleted or extinct. As settlement progressed, wildlife habitat was reduced by cutting and burning of forests, pollution of streams, industrial and urban development, drainage of wetlands, building of dams, and other changes in the land.

Today, the arctic and alpine tundra, a major vegetational region, has begun to show serious man-made changes. The adjacent sub-arctic and sub-alpine non-commercial forests have been affected principally by increased human travel which has brought an increase in the number of forest fires, although the great forests farther south retain much of their original character despite exploitation. Arable lands, originally forest or grassland, have completely changed but they have, in some cases, become more suitable than the original wilderness for some forms of wildlife. The surplus of game and fur species available for harvest across Canada is seldom fully utilized and wildlife will remain generally abundant where habitat is preserved and management enlightened.

Today, Canada is known for its varied and abundant wildlife. It maintains most, or all, of the world's stock of woodland caribou, mountain sheep, wolves, grizzly bears and wolverines. These animals exist because of the vast habitat and because of the efforts that have been made to preserve them.

In 1885, the Rocky Mountain Park (now Banff National Park) was established in Alberta, preserving an area of over 2,500 sq miles in its natural state; in 1887, the continent's first bird sanctuary was established at Last Mountain Lake in Saskatchewan; in 1893 when wood bison faced extinction, laws were passed to protect them and a nucleus herd of plains bison was established at Wainwright, Alta. in 1907. These were among the early attempts at wildlife conservation in Canada.

For a long time, certain species were protected from man and predator. Now, because of better understanding of how nature works, it has been recognized that many factors cause fluctuations in wildlife numbers, and hunting seasons and bag limits are based to a greater extent on environment. Given a fully stocked environment, the annual increase need only replace the losses. Surplus production can therefore be taken by predatory animals or, in the case of game species, by man, without endangering the species.

As a natural resource, wildlife within each province comes under the jurisdiction of the provincial government. However, the federal government does have responsibility for wildlife on federal land and for research and management of migratory birds.

10.4.1 The Canadian Wildlife Service

The Canadian Wildlife Service (CWS) began as an agency to administer the Migratory Birds Convention Act passed in 1917. It was expanded in 1947 to meet the need for scientific research in wildlife management and is now a section of the Department of the Environment.

The CWS conducts scientific research into wildlife problems in the Northwest Territories, the Yukon Territory and the national parks. It advises agencies concerned with wildlife management and co-operates in carrying out recommendations, advises on and co-ordinates administration of the Game Export Act in the provinces, and co-operates with agencies in Canada and abroad in dealing with national and international problems related to wildlife resources. The Canada Wildlife Act, passed by Parliament in 1973, provides the federal government and the CWS with a legislative basis for undertaking joint federal-provincial wildlife management programs. As administrator of the Migratory Birds Convention Act the CWS, in consultation with provincial wildlife agencies, is responsible for recommending the annual revisions of the Migratory Birds Regulations which govern open seasons, bag limits and hunting practices. Enforcement of the Act and Regulations is carried out by the Royal Canadian Mounted Police with CWS and provincial co-operation.

The loss of wetlands to drainage and filling for agricultural and other purposes poses a serious threat to waterfowl. To counteract this the CWS, in co-operation with provincial agencies, began a major program in 1967 to preserve wetlands by purchase or long-term lease. By 1973, 42,000 acres had been bought for \$8 million. The CWS also has charge of 80 bird sanctuaries covering 44,400 sq miles.

The CWS conducts two annual surveys of waterfowl hunters, selected from the 450,000 holders of the Canada migratory game bird hunting permits, to obtain estimates of the species and age of the major waterfowl species taken by hunters. Other continuing projects related to migratory game birds include annual surveys of crop damage in the Prairie Provinces and of waterfowl populations and habitat conditions in western Canada, a program to reduce hazards caused by birds flying near airports, and a search for a substitute for lead shot which each year causes lead poisoning and subsequent death of a large number of waterfowl. Bird-banding provides valuable information on the migration and the biology of birds, and is especially useful in waterfowl management. The CWS headquarters in Ottawa keeps sets of continental banding records and controls the activities of banders operating in Canada. Much attention has been given to species greatly reduced in number or in danger of extinction. By 1973, 17 young had been raised from whooping crane eggs taken from the breeding grounds and incubated at the Patuxent Wildlife Research Center in Maryland. Eventually, the progeny from these 17 chicks will be released into the wild but only after a sufficiently large supply of breeding birds has been developed. In 1973, 14 nesting pairs laid 27 eggs, but only two chicks reached the wintering grounds. The total population by December 1973 was 48, a net loss of three from December 1972.

Research continues on the effects of toxic chemicals on wildlife at a number of sites across the country. A new project has been started in Alberta to study the ways in which herbicides alter the habitat on which wildlife depends. The results of field work on the relation between chemical contamination of the lower Great Lakes and the breeding success of their fish-eating birds will be published within a year.

Studies continued into the health status of game and fur-bearing animals and rodents in northern Canada and into parasitism in these mammals as well as birds. Measures to control anthrax among bison in Wood Buffalo National Park and in the Northwest Territories were again successful; no outbreaks occurred in 1973.

The interpretation program, which began in 1970 with the Wye Marsh Wildlife Centre at Midland, Ont., expanded in 1973 with the opening of Cap Tourmente and Percé Wildlife Centres, both situated in Quebec. The former focuses on the migrant Greater Snow Goose population; the latter interprets the natural and human history of the Atlantic gulf coast, with special attention to Percé and the nearby sea-bird colonies of Bonaventure Island. Construction began in 1973 on the Creston Valley Wildlife Centre in British Columbia, scheduled to open in 1974.

The CWS has been participating in the Canada Land Inventory which is a federal-provincial program to gather information on how land in the settled parts of Canada is being used, and how best it could be used for agriculture, forestry, recreation and wildlife.

Research in limnology includes inventory and productivity of lakes and rivers in the national parks and the biology of fish and associated flora and fauna. The CWS provides advice to Parks Canada with the view to maintaining stocks of fish through modern methods of management, where they can be applied without detriment to the values of the areas concerned.

10.4.2 Provincial wildlife management

Newfoundland. The functions of the Newfoundland Wildlife Service are: to maintain all indigenous species from extinction; to provide other species where suitable unused habitat exists, bearing in mind the real and aesthetic values of wildlife that are important to man; to maintain all species in the greatest number possible, consistent with the habitat needs of the species and without serious conflict with the other resource needs; and, to provide and regulate the harvest surplus of wildlife populations.

The Wildlife Service manages big game almost solely through varying the hunting regulations based on population data gathered from field studies and hunter questionnaires as well as by transplanting caribou and moose to unoccupied range and controlling predators such as lynx around caribou calving grounds. Black bear, the only other big game species, has increased in numbers over the past six years and a trapping program is currently in progress to gain information on their distribution and movements. Research is also being conducted on the ecology and biology of small game species such as snowshoe and arctic hare, willow and rock ptarmigan and ruffed grouse. Waterfowl management is conducted by federal authorities.

The wild fur industry in Newfoundland, as elsewhere, has been characterized by short-term instability and a long-term decline. However, recent fur sales have set record prices and this suggests that the decline of the past decade may be temporarily halted. The number of trappers in the province is the same as 10 years ago and as a result of continued interest by trappers, research and management studies are being conducted on all fur bearers. Previously, beaver was the only fur bearer benefiting from a management program. Studies are continuing on the biology of the endangered Newfoundland pine marten. It is hoped that these studies will provide the information necessary to produce the management program required to ensure survival of the species.

Prince Edward Island. The Fish and Wildlife Division of the Environmental Control Commission has full or partial responsibility for research and management of all wildlife on Prince Edward Island. All non-migratory wildlife are the full responsibility of the province while the management responsibilities for fish and migratory birds are shared with the federal government. A prime responsibility is the continual monitoring of game populations to assist in setting seasons and bag limits. Attempts are being made to establish a viable population of pheasants by the introduction of new species and continued evaluation of their performance. A research project on the ruffed grouse is being conducted. Emphasis is on habitat evaluation and populations as they relate to habitat.

Habitat improvement is of prime importance for all forms of wildlife. Fishery management consists largely of the building of fish ladders to facilitate fish passage and other stream improvement measures such as stream bed stabilization. Silting has long been a problem in some Island streams. A pilot project to monitor silt, and to identify and correct its source is being carried out on the Dunk River, one of the largest systems on the Island.

Nova Scotia. The Wildlife Division of the Department of Lands and Forests is responsible for developing a wildlife program to fulfil present and future social needs by identifying objectives, formulating and implementing resource plans, co-ordinating these within the Department and with other planning agencies to ensure optimum wildlife production for the people of Nova Scotia.

Continuing studies are under way to monitor the status of moose, deer and black bear. Specific studies were also implemented in 1973 to obtain information on: moose distribution, densities and reproductive rates; the prevalence and distribution of the central nervous system parasite in deer and moose; the effects of various forest cutting practices on deer and moose and their winter range; the location of major deer wintering areas throughout the province; and the extent of the black bear depredation problem.

Major fur bearers include beaver, muskrat, mink, otter, bobcat, lynx, fox and raccoon. About 3,500 trappers utilized the resource in 1972-73 with total wild fur production amounting to about \$381,000. Primary emphasis is currently directed toward beaver and otter research. Close co-operation exists between the Division and the Trappers Association of Nova Scotia to ensure wise use and management of the fur resource.

Migratory bird management is shared jointly by the Canadian Wildlife Service and the provincial Wildlife Division. Established programs concerning population inventories, band-

ing, etc., are conducted annually by the Division. Several major waterfowl areas have been acquired and are being developed in co-operation with Ducks Unlimited (Canada). Acquisition of marshlands and unique coastal areas will continue to be an important part of the program.

The appointment of a specialist in 1973 is an indication of the emphasis being placed on wildlife resource education. Other significant projects include: an assessment of the hunter—landowner relations problem, socio-economic evaluation of the fish and wildlife resources, marshland production studies and the development of a non-game species program. These programs are conducted in co-operation with Acadia and Dalhousie universities. There are 19 federal and provincial management areas in Nova Scotia where wildlife is protected involving about 500,000 acres of land and water.

New Brunswick. The wildlife resources in New Brunswick are the responsibility of the Fish and Wildlife Branch of the Department of Natural Resources. Orders in Council issued under the New Brunswick Game Act provide a means of controlling bag limits and hunting pressure in the utilization of population surpluses for all native wildlife species.

Biological surveys of the more important game animals are carried out throughout the year to determine the current status and condition of population. At the present time principal areas of concern are the management of the following animals and their habitat: moose, white-tailed deer, black bear, beaver, muskrat and woodcock. Some of the most important factors limiting the numbers of big-game animals in New Brunswick are the condition and extent of the winter habitat. A study area consisting of 1 million acres of Crown land has been established in the Bathurst area to evaluate the "multiple-use" concept. Game, fish, recreation and forest management will be integrated to optimize exploitation of all renewable resources in the area.

A New Brunswick Trappers Association endorsed by the Fish and Wildlife Branch has recently been established in an attempt to improve the quality of raw furs. The primary objectives of the Association include the personal involvement of the resident trappers in the wise use and management of the fur resource in the province. The current demand for long-hair furs such as bobcat, fox and fisher has diverted trapping pressure from beaver, otter, mink and muskrat.

Sport fishing contributes substantially to the economy of the province. Atlantic salmon anglers fished an average of 82,358 days to catch an average of 33,303 salmon and grilse each year during the four years 1969 through 1972. The Miramichi River system accounted for 82% (27,509) of the average salmon and grilse angler catch during this period. However, more angler-days are spent and fish caught in NB by anglers fishing for brook trout. In 1970, 1,017,000 angler-days were spent participating in the inland sport fishery including trout and Atlantic salmon angling. Atlantic salmon angling comprised only 8.5% of this total.

Quebec. The management and protection of wildlife within Quebec is the responsibility of the Fish and Game Branch of the Department of Tourism, Fish and Game. The Branch, operating under the Wildlife Conservation Act which is the legal basis for protecting fish and wildlife animal species within the province, consists of five Services. The Wildlife Management Service is responsible for the management of all wildlife and particularly of species of interest to hunters and fishermen. Biologists are assigned to nine districts and their work includes the collection of data on animal populations and habitats in the respective areas. The Wildlife Research Service conducts projects to improve the basic knowledge of fish and wildlife in order to help wildlife managers. The Fish Hatchery Service operates seven hatcheries, inspects commercial hatcheries and controls imports of eggs and salmonids. The Conservation Service is responsible for enforcing fishing and hunting regulations and for informing the public of the scope and importance of such regulations. Finally, the Leasing Service of fishing and hunting rights deals with outfitters and private clubs.

Ontario. Wildlife management in Ontario is administered by the Division of Fish and Wildlife of the Ministry of Natural Resources under the authority of the Ontario Game and Fish Act, the Endangered Species Act, the Migratory Birds Convention Act and the Regulations connected with them. Objectives for this division are to manage the fish and wildlife resources of Ontario so as to provide and encourage a continuous supply of recreational and economic opportunities and to develop public understanding of relevant ecological principles. Within the

Division of Fish and Wildlife, the Wildlife Branch and the Commercial Fish and Fur Branch have responsibilities involving wildlife management. Recent decentralization has resulted in the distribution of management functions between main office and eight regional and 49 district offices.

The deer herd in Ontario has experienced a decline during the past few decades, manifested by a southward retraction of about 200 miles in the northern limit of the range of white-tailed deer as well as by a reduction in deer populations throughout the remaining deer range. The primary cause of the decline has been the maturation of the forest following the reduction of logging and fires since the 1930s. Several series of severe winters were instrumental in reducing the deer herd to a size compatible with the reduced range quality. The management program has been aimed at increasing the amount of browse available in winter yards and maintaining suitable winter cover. Moose management is concentrated on production and harvest inventory and evaluation of the effects of various forest practices and conditions on moose range. The number of moose hunters has been increasing and more intensive management measures for moose are being formulated.

In upland game and waterfowl management programs, effort is directed to the maintenance and improvement of habitat as it is habitat which determines the potential wildlife numbers. Management is carried out on areas under agreement between landowners and the province and on provincial wildlife areas. These two categories of wildlife management areas have helped to increase opportunities for nature study and hunting in southern Ontario where most of the land is privately owned. Certain of these areas also ensure preservation of the wetland habitats important to a great variety of wildlife, especially waterfowl. A program to re-establish a wild-breeding population of the giant Canada goose in southern Ontario is continuing and these birds are now to be seen in many areas. Waterfowl banding, production surveys and harvest inventory are carried out to assist in developing waterfowl management programs.

The major effort in fur management is directed toward beaver. This involves aerial censuses of beaver colonies and specimen collections by trappers. Monthly summaries of all fur bearers taken by each trapper are now prepared. The harvest of beaver, marten and fisher is controlled by quota. About three quarters of the fur harvested in Ontario is auctioned through the Ontario Trappers' Association Fur Sales Service in North Bay. A concerted effort to develop better and more humane traps was started in 1973 in co-operation with the Ontario Trappers' Association. Workshops on trapping techniques, pelt preparation, animal biology and management practices have continued to upgrade trappers' skills and knowledge.

Manitoba. The Manitoba Department of Mines, Resources and Environmental Management is responsible for the management and conservation of the province's wildlife resources. Authority provided by provincial legislation (The Wildlife Act, and The Predator Control Act and Regulations) allows for legal protection and management of 25 mammals, 160 birds and two reptiles that occur in the province. The Federal Migratory Birds Convention Act deals with the protection of migratory game birds, migratory insectivorous birds and migratory non-game birds.

The Department is made up of five Divisions (Mines and Departmental Services, Environmental Management, Resources Management, Water Resources and Technical Services) each responsible for one or more aspects of wildlife research and management. Wildlife authorities manage over 50 game hunting areas; 40 trapping areas; 30 wildlife, game bird, goose and fur-bearing animal refuges; and 26 wildlife management areas. The setting of definite seasons and bag limits is one of the major management tools utilized to control hunting and trapping pressure. Considerable effort is also being directed toward wildlife habitat acquisition and development.

Two new wildlife management areas were established in 1973; Oak Hammock Marsh Wildlife Management Area, and Cape Tatnam Wildlife Management Area which is the largest in the province and the first in Manitoba's extreme north. A plan for development and management of Delta Marsh was made in 1973. A federal-provincial committee for humane trapping was formed in 1973.

Saskatchewan. Management of the province's wildlife resource is administered by the Fisheries and Wildlife Branch of the Department of Tourism and Renewable Resources. Legislative authority is provided through The Game Act and The Fur Act. The objective of the

Department's wildlife management program is to provide and encourage the utilization and development of the province's wildlife resources for the recreational, social and economic benefit of the people of Saskatchewan and, to this end, the Branch administers a Wildlife Research and Management program. Research projects are undertaken to: determine production of wildlife species; determine habitat conditions for wildlife; investigate effects of land use practices on the wildlife resource; study limiting factors on wildlife populations; determine diseases of certain wildlife species and their relative importance to wildlife populations; and, develop techniques to facilitate maximum utilization of the wildlife resource on a sustained-yield basis. The role of the Wildlife Research Unit, therefore, is to provide basic information of the resource which is subsequently used as the foundation of the wildlife management and development program.

Reduction of wildlife habitat as a result of intensive agricultural practices is at present a major concern. A Wildlife Development Fund to acquire, develop and improve wildlife lands has been established. It is financed from game licences which provide approximately \$230,000 annually. A Game Advisory Committee representing various public groups is consulted on an annual basis on proposed game seasons, bag limits and management programs.

British Columbia. The Fish and Wildlife Branch of the Department of Recreation and Conservation is responsible for the protection, enhancement and wise use of the wildlife and freshwater fish resources of British Columbia. Administrative and technical headquarters are in Victoria, with six regional headquarters in the main centres of population, as well as 44 district offices, three fish hatcheries and a number of permanent field stations throughout the province. The Branch promotes the wise and orderly use of upland birds, game animals and sport fish by licensing hunters and anglers and by determining and enforcing closed seasons, bag limits and other regulatory measures. It licenses and regulates the trapping of fur-bearing animals, the commercial propagation of game birds and fish, the activities of big-game guides and generally acts as manager of the province's wildlife.

Through close contact and liaison with other government agencies and with private concerns involved in mining, forestry, agriculture, water use and transportation, the Branch actively fosters the preservation of a suitable land and water environment for wildlife and outdoor recreation. The Branch enhances the abundance and health of desirable species of animals by the acquisition of key areas of range for big game and waterfowl, by the operation of fish hatcheries and the stocking of lakes and by improving habitat for both fish and wildlife. To increase the understanding of the wildlife resource and provide a proper basis for wise management, it conducts and supports fundamental and applied research on fish and wildlife and their environment.

The Branch's objective is to make a significant contribution to the economy and well-being of British Columbia through wise management of game resources and of non-tidal fisheries. It attempts to maintain British Columbia's waters and lands in a state of continuing productivity through attention to such major matters as pollution and land use and encourages planned or integrated use of lands for forestry, agriculture and wildlife. The Branch also creates public awareness, through programs of education and information, of the values of wildlife resources and of the principles of wise management; protects the resource from unlawful and indiscriminate use and waste; and furthers the rights of the public as a consumer of the wildlife resource.

Sources

- 10.1 - 10.1.2 Information Services Branch, Department of the Environment.
- 10.1.3 Information Services Branch, Department of the Environment; provincial returns from respective provincial government departments.
- 10.1.4 Manufacturing and Primary Industries Division, Industry Statistics Branch, Statistics Canada.
- 10.2 - 10.2.1 Information Services Branch, Department of the Environment.
- 10.2.2 Supplied by the respective provincial government departments.
- 10.2.3 Manufacturing and Primary Industries Division, Industry Statistics Branch, Statistics Canada.
- 10.3 Agriculture Division, Industry Statistics Branch, Statistics Canada.
- 10.4 Information Services Branch, Department of the Environment.

Tables

..	not available	e	estimate
...	not appropriate or not applicable	p	preliminary
—	nil or zero	r	revised
--	too small to be expressed	certain tables may not add due to rounding	

10.1 1968 National Forest Inventory

Province or territory	Forest land <i>sq miles</i>		Non-reserved forest land tenure <i>sq miles</i>			Volume ^a <i>MM cu ft</i>		
	Total ¹	Non-reserved ²	Crown provincial	Crown federal	Privately owned	Soft-woods	Hard-woods	Total
Newfoundland	47,576	47,176	38,428	--	8,748	4,010	--	4,010
Prince Edward Island	976	965	10	2	953	97	52	149
Nova Scotia	15,555	15,024	3,125	33	11,866	6,045	2,539	8,584
New Brunswick	24,464	24,389	11,139	511	12,739	11,947	4,921	16,868
Quebec	268,480	268,383	240,161	303	27,919	96,954	33,443	130,397
Ontario	188,335	180,588	160,916	1,761	17,911	66,596	44,830	111,426
Manitoba	60,109	59,232	53,024	422	5,786	9,991	2,763	12,754
Saskatchewan	40,500	38,206	36,134	592	1,480	9,913	7,087	17,000
Alberta	106,754	97,229	93,481	843	2,905	36,017	23,558	59,575
British Columbia	215,743	210,684	199,891	781	10,012	261,313	7,322	268,635 ⁴
Yukon Territory	81,200	81,200	--	81,200	--	--	--	--
Northwest Territories	194,600	194,600	--	194,600	--	--	--	--
Canada	1,244,292	1,217,676	836,309	281,048	100,319	502,883	126,515	629,398

¹Land capable of producing stands of trees 4" dbh and larger on 10% or more of the area.
²Excludes land in parks, game refuges, water conservation areas and nature preserves, where, by legislation, wood production is not primary.
³Non-reserved inventoried areas only; excludes Labrador, the Yukon Territory and Northwest Territories for which no data are available.
⁴Mature timber only.

10.2 Forest utilization and depletion by fire, ten-year average 1962-71

Item	Usable wood <i>MM cu ft</i>	Percentage of total depletion
Products utilized		
Logs and bolts ¹		
Domestic use	2,308	55.1
Exported	26	0.6
Pulpwood		
Domestic use	1,190	28.5
Exported	97	2.3
Fuelwood (incl. wood for charcoal)	177	4.2
Other products	55	1.3
Total utilization	3,853	92.0
Wastage by forest fires	335	8.0
Total depletion ²	4,188	100.0

¹Includes some wood used in pulp manufacture.
²Excludes losses caused by insects, disease or natural mortality for which no reliable estimates are available.

10.3 Forest fire losses, 1972, compared with ten-year average 1962-71

Item	Average 1962-71	1972
Fires	<i>No.</i>	
Under 10 acres	7,662	8,227
10 acres or over	6,622	6,995
Area burned	<i>acres</i>	
Merchantable timber	1,040	1,232
Young growth	1,955,209	1,927,444
Cut-over lands	389,900	546,230
Non-forested lands	622,800	512,498
Estimated values destroyed ¹	<i>\$</i>	
Merchantable timber	81,347	65,572
Young growth	861,162	803,144
Cut-over lands	13,062,062	20,872,205
Other property burned	7,810,016	12,341,825
Actual cost of fire fighting	3,574,648	7,020,275
Total damage and fire-fighting cost	251,961	482,246
Area under protection	1,425,437	1,027,859
	12,400,120	19,861,312
	25,462,182	40,733,517
	<i>sq miles</i>	1,692,453

¹Excludes such values as damage to soil, stream-flow, wildlife, recreation and tourist facilities.

10.4 Forest fires, by cause, 1972, compared with ten-year average 1962-71

Cause	Average 1962-71		1972	
	<i>No.</i>	<i>%</i>	<i>No.</i>	<i>%</i>
Recreation	1,774	23	1,330	16
Settlement	869	11	877	11
Woods operations	334	4	316	4
Railways	417	6	488	6

10.4 Forest fires, by cause, 1972, compared with ten-year average 1962-71 (concluded)

Cause	Average 1962-71		1972	
	No.	%	No.	%
Other industries	308	4	232	3
Incendiary	324	4	442	5
Miscellaneous known	1,175	16	1,654	20
Unknown	386	5	364	4
Total, man-caused	5,587	73	5,703	69
Lightning	2,075	27	2,524	31
Total, all fires	7,662	100	8,227	100

10.5 Volume of wood cut, by province, 1969-71 (thousand cubic feet)

Province or territory	1969	1970	1971
Newfoundland	83,213	100,610	82,080
Prince Edward Island	5,638	8,636	7,470
Nova Scotia	121,227	113,853	114,282
New Brunswick	236,414	240,664	243,846
Quebec	1,060,070	1,020,550	938,690
Ontario	621,645	593,315	559,340
Manitoba	52,901	44,482	54,937
Saskatchewan	82,130	83,880	80,930
Alberta	145,773	146,331	146,129
British Columbia	1,890,052	1,932,628	1,997,082
Yukon Territory and Northwest Territories	4,753	2,941	2,417
Canada	4,303,816	4,287,890	4,227,203

10.6 Volume of wood cut, by type of product, 1969-71 (thousand cubic feet)

Type of product	1969	1970	1971
Logs and bolts	2,593,799	2,671,355	2,752,727
Pulpwood	1,512,369	1,426,783	1,303,197
Fuelwood	151,346	144,649	131,835
Poles and piling	8,901	7,696	5,239
Round mining timber	3,955	3,341	3,044
Wood for charcoal	1,560	1,440	—
Fence posts	20,506	20,365	12,009
Fence rails	469	896	—
Miscellaneous roundwood	10,911	11,365	19,152
Total	4,303,816	4,287,890	4,227,203

10.7 Lumber production and shipments and value of all shipments of the sawmill and planing mill industry, by province, 1970 and 1971

Year and province or territory	Lumber		Value of shipments ¹ \$'000	Value of shipments ¹ of goods of own manufacture \$'000
	Production <i>Mfbm</i>	Quantity shipped ¹ <i>Mfbm</i>		
1970				
Newfoundland	22,586	19,575	1,817	2,080
Prince Edward Island	1,849	1,849	104	164
Nova Scotia	168,436	172,640	16,310	20,529
New Brunswick	278,888	292,310	27,080	48,445
Quebec	1,579,627	1,490,607	129,337	168,359
Ontario	771,000	730,449	74,632	99,022
Manitoba	30,678	25,747	1,819	3,312
Saskatchewan	52,157	94,068	7,313	9,132
Alberta	409,452	486,794	33,939	39,431
British Columbia	7,349,642	7,636,601	632,203	744,022
Yukon Territory and Northwest Territories				881
Canada	10,671,645	10,957,951	925,358	1,135,377
1971				
Newfoundland	18,367	23,322	2,272	2,850
Prince Edward Island	1,347	1,347	120	
Nova Scotia	142,593	165,157	16,426	20,056
New Brunswick	282,008	308,818	30,846	52,074
Quebec	1,662,938	1,813,152	160,537	205,103
Ontario	822,626	816,909	88,850	115,752
Manitoba	43,604	49,033	4,152	5,797
Saskatchewan	86,851	131,126	11,548	13,389
Alberta	474,922	546,791	42,905	49,144
British Columbia	8,490,241	8,772,213	801,262	930,623
Yukon Territory and Northwest Territories	5,238	5,279	478	
Canada	12,030,735	12,633,147	1,159,396	1,395,507

¹Shipment figures contain some duplication because sales of lumber from one sawmill to another are reported as shipments by both establishments.²Confidential.

10.8 Lumber shipments¹ of the sawmill and planing mill industry, by species, 1969-71

Kind of wood	1969		1970		1971	
	Quantity <i>Mfbm</i>	Value \$'000	Quantity <i>Mfbm</i>	Value \$'000	Quantity <i>Mfbm</i>	Value \$'000
Spruce	4,580,452	395,813	4,442,106	332,690	5,499,747	463,433
Douglas-fir	1,784,319	184,537	1,671,134	145,941	1,734,079	172,744
Hemlock	1,906,858	187,080	1,986,250	168,499	2,317,156	206,143
Cedar (red and white)	857,712	104,339	829,253	91,934	982,225	109,824
White pine	288,058	35,829	208,968	25,991	240,790	29,617
Jack pine	355,434	28,958	338,442	24,903	387,401	31,792
Maple	209,771	27,850	165,610	22,955	170,968	25,524
Yellow birch	140,413	19,462	114,549	15,244	119,734	16,193
Lodgepole pine	381,914	32,329	413,467	28,330	538,503	45,120
Balsam fir	146,620	12,649	203,735	16,654	218,905	19,358
Other	265,440	29,220	584,437	52,217	423,639	39,648
Total	10,916,991	1,058,066	10,957,951	925,358	12,633,147	1,159,396

¹ See footnote 1, Table 10.7.**10.9 Veneer and plywood shipments, by type, 1969-71**

Type	1969		1970		1971	
	Quantity <i>M sq ft</i>	Value \$'000	Quantity <i>M sq ft</i>	Value \$'000	Quantity <i>M sq ft</i>	Value \$'000
Veneer						
Softwoods	}	56,307	{	17,494	1,783,303 ¹	23,067
Hardwoods				30,973	1,145,897 ²	31,052
Softwood plywood	1,907,330 ³	171,741	1,880,077 ³	150,030	2,096,633 ³	185,860
Hardwood plywood	378,323 ⁴	40,790	323,349 ⁴	31,489	353,631 ⁴	34,322

¹Basis 1/8".²Surface measure.³Basis 3/8" unsanded.⁴Basis 1/4" sanded two sides.**10.10 Pulp shipments and production, 1969-71**

Item		1969	1970	1971
Mill shipments of pulp ¹	'000 tons	6,899	6,665	6,419
	\$'000	862,098	913,287	878,132
Groundwood pulp	'000 tons	302	324	243
	\$'000	18,174	20,399	14,688
Chemical pulps	'000 tons	6,597	6,341	6,176
	\$'000	843,925	892,888	863,444
Pulp production ²	'000 tons	18,590	18,308	18,234
Quebec	"	6,547	6,501	6,245
Ontario	"	3,961	3,969	3,800
British Columbia	"	4,879	4,519	4,860
Other provinces ³	"	3,203	3,319	3,329

¹Includes screenings.²The differences between these figures and the quantities of mill shipments represent the amounts of pulp further manufactured by the reporting companies.³ Prince Edward Island is the only province in which there is no production.**10.11 Shipments of basic paper and paperboard, by type and by province, 1969-71**

Type and province		1969	1970	1971
TYPE				
Newsprint paper	'000 tons	8,863	8,764	8,420
	\$'000	1,114,707	1,106,688	1,083,225
Book and writing paper	'000 tons	731	880	906
	\$'000	206,686	238,232	241,810
Wrapping paper	'000 tons	497	484	542
	\$'000	104,303	102,231	115,391
Paperboard	'000 tons	1,745	1,764	1,815
	\$'000	260,509	268,618	268,280
All other papers	'000 tons	259	226	256
	\$'000	46,947	41,446	43,142
Total	'000 tons	12,093	12,118	11,939
	\$'000	1,733,151	1,757,215	1,751,847
PROVINCE				
Quebec	'000 tons	5,418	5,476	5,326
	\$'000	773,739	802,931	790,685
Ontario	'000 tons	3,109	3,071	3,041
	\$'000	507,792	506,120	510,764
British Columbia	'000 tons	1,872	1,833	1,928
	\$'000	237,891	236,769	247,658
Other provinces ¹	'000 tons	1,694	1,738	1,644
	\$'000	213,729	211,395	202,740

¹Prince Edward Island is the only province in which there is no production.

10.12 Exports of pulp and newsprint to Britain, United States and all countries, 1969-72

Commodity and year	Britain		United States		All countries	
	Quantity tons	Value \$'000	Quantity tons	Value \$'000	Quantity tons	Value \$'000
Pulp						
1969	288,050	36,158	3,807,044	514,242	5,794,575	753,488
1970	377,385	49,540	3,315,519	485,453	5,581,325	785,229
1971	348,912	48,258	3,373,009	480,725	5,241,896	796,334
1972	445,122	60,816	3,497,820	472,861	6,102,175	817,335
Newsprint						
1969	486,916	60,616	6,525,512	919,877	8,235,000	1,125,801
1970	411,665	59,596	6,212,134	872,544	8,090,007	1,110,393
1971	432,788	56,830	6,210,566	880,682	7,797,737	1,084,282
1972	560,615	80,127	6,390,256	933,761	8,101,676	1,157,509

10.13 Persons employed in the primary fishing industry, by province, 1971 and 1972

Province or territory	Sea fisheries		Inland fisheries	
	1971	1972 ^P	1971	1972 ^P
Newfoundland	15,961	14,452	...	...
Prince Edward Island	2,677	3,210	...	...
Nova Scotia	10,688	11,735	...	...
New Brunswick	5,148	5,067	121	94
Quebec	5,252	5,277	571	566
Ontario	...	...	1,999	2,097
Manitoba	...	...	1,394 ¹	...
Saskatchewan	...	...	1,667 ¹	1,800
Alberta	...	...	628 ¹	...
British Columbia	11,015	9,902	...	...
Yukon Territory	...	...	78	87
Northwest Territories	...	...	198 ¹	...
Total	50,741	49,643	6,656	...

¹Fishermen who sold fish to the Freshwater Fish Marketing Corporation.

10.14 Value of all fishery products, by province, 1971 and 1972 (thousand dollars)

Province or territory	1971	1972 ^P
Newfoundland	94,943	100,599
Prince Edward Island	16,143	19,964
Nova Scotia	127,215	142,102
New Brunswick	68,629	86,380
Quebec	26,022	25,938
Ontario	13,896	16,238
Manitoba	12,674	15,449
Saskatchewan		
Alberta		
Northwest Territories	120,209	159,178
British Columbia and Yukon Territory ¹		
Total ²	463,013	545,587

¹Includes landings by Canadian fishermen in United States ports.

²The sum of provincial totals differs from Canada total as intershipments between provinces have been removed from the Atlantic Coast.

10.15 Landings of sea and inland fish and other sea products, by province, 1971 and 1972

Province or territory	1971 ¹		1972 ^P	
	Quantity '000 lb.	Value \$'000	Quantity '000 lb.	Value \$'000
Newfoundland	874,353	35,808	650,795	35,723
Prince Edward Island	97,508	9,426	56,847	9,540
Nova Scotia	657,876	57,660	632,537	66,375
New Brunswick	370,124	16,251	357,539	19,923
Quebec	240,969	10,594	183,483	11,138
Ontario	42,795	6,948	43,195	8,119
Manitoba	15,739	2,403	24,479	4,523
Saskatchewan	12,539	1,802	10,725	1,634
Alberta	5,347	730	2,295	379
British Columbia ¹	228,754	58,588	337,508	75,128
Yukon Territory	52	24	53	27
Northwest Territories	3,984	960	3,531	838
Total	2,550,040	201,193	2,302,987	233,347
Sea fish	2,454,640	187,737	2,208,390	217,131
Inland fish	95,400	13,456	94,597	16,216

¹Includes halibut landed in United States ports.

10.16 Landings of the chief commercial fish, 1971 and 1972

Area and species	1971 ^r		1972 ^p	
	Quantity '000 lb.	Value \$ '000	Quantity '000 lb.	Value \$ '000
ATLANTIC COAST				
Groundfish	1,138,020	59,556	1,045,709	61,225
Catfish	9,511	378	6,887	334
Cod	449,168	25,132	402,611	26,154
Flounder and sole	305,267	14,880	279,453	15,125
Haddock	53,601	5,980	31,610	4,511
Hake	27,539	1,215	28,521	1,503
Halibut	3,286	1,579	2,750	1,693
Pollock	22,108	999	33,584	1,643
Redfish	248,624	8,655	242,322	9,478
Other	18,916	738	17,971	784
Pelagic and estuarial	990,701	19,367	741,580	19,743
Alewives	10,281	237	8,297	218
Herring ¹	924,361	13,160	670,313	12,661
Mackerel	32,936	1,058	35,590	1,307
Salmon	4,035	2,250	3,355	2,130
Smelts	3,038	358	2,717	363
Swordfish	—	—	—	—
Other	16,050	2,304	21,308	3,064
Molluscs and crustaceans	88,475	49,851	75,175	60,430
Clams	12,677	1,074	8,297	903
Lobsters	38,159	33,211	33,185	37,003
Oysters	2,713	550	1,988	359
Scallops	11,171	12,961	12,044	19,508
Other	23,755	2,055	19,661	2,657
Other ²	8,690	375	8,418	605
Total, Atlantic Coast	2,225,886	129,149	1,870,882	142,003
PACIFIC COAST				
Groundfish	52,025	10,548	54,189	16,812
Cod (gray)	8,749	779	14,978	1,264
Flounder and sole	11,120	759	8,033	599
Halibut ³	25,294	8,135	22,083	13,684
Lingcod	4,342	649	3,629	588
Sablefish	496	111	1,622	462
Other	2,024	115	3,844	215
Pelagic and estuarial	165,056	46,580	268,661	56,093
Herring	22,082	556	86,025	2,726
Salmon	132,367	44,479	164,386	50,341
Chum	11,928	2,150	66,544	13,571
Coho	27,867	10,630	20,844	11,052
Pink	37,923	6,528	39,536	6,636
Sockeye	37,564	15,910	20,943	8,983
Spring	16,908	9,206	16,309	10,028
Other	177	55	210	71
Other	10,607	1,545	18,250	3,026
Molluscs and crustaceans	11,673	1,460	14,658	2,223
Clams	2,547	235	3,438	382
Crabs	1,963	425	1,976	753
Oysters	6,327	536	8,251	702
Shrimps and prawns	735	241	794	311
Other	101	23	199	75
Total, Pacific Coast	228,754	58,588	337,508	75,128
INLAND				
Freshwater fish	67,420	12,443	76,452	15,555
Bass	114	28	1,769	318
Catfish	777	81	842	188
Herring, lake (cisco) and tullibee	4	4	4	4
Perch	4	4	17,292	4
Pickrel (yellow)	6,063	2,063	7,429	2,860
Pike	6,639	501	7,902	700
Saugers	775	247	3,999	1,213
Smelts	4	4	4	4
Sturgeon	4	4	4	4
Trout	1,657	330	1,345	354
Whitefish	19,379	3,855	18,175	3,811
Other	32,016	5,338	17,699	6,111
Other ⁴	27,980	1,013	20,706	1,010
Total, Inland	95,400	13,456	97,158	16,565
TOTAL	2,550,040	201,193	2,305,548	233,696

¹Includes sardines.
²Includes livers and scales.
³Includes landings by Canadian fishermen at United States ports.
⁴Included in "Other".
⁵Sea fish caught inland.

10.17 Market value of all fishery products, by area and species, 1971 and 1972 (thousand dollars)

Area and species	1971	1972P	Area and species	1971	1972P
ATLANTIC COAST			PACIFIC COAST		
Groundfish	147,069	167,892	Groundfish	16,026	24,112
Catfish	1,332	1,140	Cod (gray)	1,299	3,428
Cod	63,984	66,656	Flounder and sole	1,829	1,504
Flounder and sole	34,405	42,406	Halibut ¹	11,367	16,904
Haddock	10,018	8,911	Lingcod	1,003	981
Hake	1,808	2,494	Sablefish	219	806
Halibut	1,914	2,365	Other	309	489
Pollock	2,912	4,714	Pelagic and estuarial	101,138	131,232
Redfish	22,714	28,625	Herring	2,256	12,612
Other	7,982	10,581	Salmon	96,926	114,349
Pelagic and estuarial	69,160	69,663	Chum	5,128	30,840
Alewives	603	710	Coho	19,586	16,642
Herring (includes sardines)	54,717	54,452	Pink	20,017	20,642
Mackerel	3,565	3,394	Sockeye	33,437	20,673
Salmon	4,474	3,761	Spring	13,896	14,768
Smelts	854	979	Other	4,862	10,784
Tuna	2,962	4,262	Other	1,956	4,271
Other	1,985	2,105	Molluscs and crustaceans	2,730	3,529
Molluscs and crustaceans	81,988	96,308	Clams	503	759
Clams	2,388	2,218	Crabs	947	1,318
Crabs	6,278	9,485	Oysters	806	934
Lobsters	49,730	55,072	Shrimps and prawns	435	412
Oysters	1,134	585	Other	39	106
Scallops	19,330	27,452	Other sea products	273	259
Other	3,128	1,496	Total, Pacific Coast	120,167	159,132
Other sea products	18,185	20,818	Total, Inland	26,444	32,325
Total, Atlantic Coast ¹	316,402	354,681	TOTAL	463,013	546,138

¹Excludes duplication.²Includes halibut landed by Canadian fishermen in United States ports.**10.18 Pacific Coast production of canned salmon, 1971 and 1972**

Kind	1971		1972P	
	Quantity 48-lb. cases	Value \$'000	Quantity 48-lb. cases	Value \$'000
Chum	98,508	3,169	278,451	9,640
Coho	221,463	10,337	83,756	4,464
Pink	502,324	18,803	485,164	20,033
Sockeye	568,756	33,064	312,907	20,499
Spring	11,653	387	11,608	464
Steelhead	1,301	44	867	35
Total	1,404,005	65,804	1,172,753	55,135

10.19 Atlantic Coast production of frozen fillets and fish blocks, 1971 and 1972

Area and species	1971		1972P	
	Quantity '000 lb.	Value \$'000	Quantity '000 lb.	Value \$'000
NEWFOUNDLAND	135,709	55,961	123,780	62,180
Cod	62,547	25,613	53,389	24,659
Haddock	851	396	405	216
Redfish	16,229	5,131	16,620	6,502
Flatfish	53,656	23,877	49,929	29,632
Other	2,426	944	3,437	1,171
MARITIMES	98,481	38,541	93,694	43,183
Cod	22,402	9,598	24,187	11,809
Haddock	10,726	5,624	5,526	3,620
Redfish	26,165	8,134	24,155	10,672
Flatfish	15,513	7,374	12,734	7,976
Other	23,675	7,811	27,092	9,106
QUEBEC	32,818	11,947	27,534	10,980
Cod	9,424	4,109	7,382	3,083
Redfish	19,024	6,485	16,491	6,599
Flatfish	2,296	1,018	1,904	1,015
Other	2,074	335	1,757	283
TOTAL, ATLANTIC COAST	267,008	106,449	245,008	116,343
Cod	94,373	39,320	84,958	39,551
Haddock	11,577	6,020	5,931	3,836
Redfish	61,418	19,750	57,266	23,773
Flatfish	71,465	32,269	64,567	38,623
Other	28,175	9,090	32,286	10,560

10.20 Pelts of fur-bearing animals produced, by province, years ended June 30, 1971-72 and 1972-73

Province or territory	1971-72 fur season [†]			1972-73 fur season		
	Pelts No.	Value \$	% of total value	Pelts No.	Value \$	% of total value
Newfoundland	60,185	586,147	1.8	53,095	580,725	1.2
Prince Edward Island	14,292	168,786	1.0	11,424	156,057	0.3
Nova Scotia	146,378	1,631,329	5.0	135,340	2,010,788	4.3
New Brunswick	38,362	407,566	1.2	30,691	519,159	1.1
Quebec	410,428	3,213,796	9.8	384,367	4,865,410	10.4
Ontario	1,023,532	9,688,164	29.6	1,109,807	13,986,830	30.0
Manitoba	674,415	3,748,452	11.4	508,143	4,747,829	10.2
Saskatchewan	644,100	2,625,283	8.0	533,577	4,308,935	9.2
Alberta	687,713	4,859,195	14.8	727,971	8,380,026	18.0
British Columbia	314,175	3,537,066	10.8	291,369	4,681,337	10.0
Yukon Territory	21,340	136,007	0.4	41,045	339,437	0.7
Northwest Territories	197,489	1,424,444	4.3	108,249	1,441,798	3.1
Canada ¹	4,274,599	32,733,913	100.0	3,956,463	46,659,186	100.0

[†] Totals include pelts and values not allocated to a province or territory, mainly Alaska fur seal and Atlantic Coast hair seal.

10.21 Pelts of wildlife fur-bearing animals taken, by kind, years ended June 30, 1971-72 and 1972-73

Kind	1971-72 fur season [†]			1972-73 fur season		
	Pelts No.	Total value \$	Average value \$	Pelts No.	Total value \$	Average value \$
Badger	2,121	23,384	11.02	5,170	68,131	13.18
Bear						
White	389	128,000	329.05	472	289,685	613.74
Black or brown	2,522	59,111	23.44	3,008	146,788	48.80
Grizzly	7	915	130.71	19	3,230	170.00
Beaver	375,213	6,444,713	17.18	452,275	9,912,695	21.92
Coyote	46,500	727,258	15.64	78,148	2,192,763	28.06
Ermine (weasel)	39,016	25,060	0.64	82,127	92,413	1.13
Fisher	8,278	242,963	29.35	13,798	508,651	36.86
Fox						
Blue	133	1,651	12.41	119	2,520	21.18
Cross and red	53,731	869,806	16.19	48,215	1,411,441	29.27
Silver	470	7,730	16.45	392	9,263	23.63
White	33,655	383,819	11.40	10,146	196,059	19.32
Not specified	2,243	22,442	10.01	10,542	292,916	27.79
Lynx	53,589	2,040,085	38.07	53,400	4,739,826	88.76
Marten	56,231	468,280	8.33	61,109	831,745	13.61
Mink	72,946	857,547	11.76	100,049	1,770,456	17.70
Muskrat	1,798,025	3,168,382	1.76	1,506,810	3,720,005	2.47
Otter	15,261	511,877	33.54	18,411	828,659	45.01
Rabbit	10,021	1,009	0.10	7,743	784	0.10
Raccoon	28,755	156,750	5.45	61,290	637,136	10.40
Seals						
Fur, North Pacific ¹	9,138	310,728	34.00	8,228	373,753	45.42
Hair	109,154	1,123,334	10.29	94,572	1,155,081	12.21
Skunk	179	67	0.37	224	196	0.88
Squirrel	390,893	217,974	0.56	291,492	304,770	1.05
Wildcat	3,837	81,729	21.30	3,682	149,116	40.50
Wolf	3,804	115,628	30.40	4,208	217,119	51.60
Wolverine	561	39,969	71.25	1,022	86,830	84.96
Total	3,116,672	18,030,211	...	2,916,671	29,942,031	...

¹ Commonly known as Alaska fur seal; value figures are the net returns to the federal government for pelts sold.

10.22 Mink farms and value of pelts produced thereon, by province, 1970-72

Province	Mink farms at year-end			Value of mink pelts produced on fur farms (\$'000)		
	1970	1971	1972	1970	1971	1972
Newfoundland	5	—	—	108	50	—
Prince Edward Island	7	5	6	97	99	84
Nova Scotia	140	109	92	1,141	1,418	1,685
New Brunswick	16	8	7	125	114	104
Quebec	58	49	46	1,520	1,489	1,689
Ontario	278	237	220	5,105	5,561	6,763
Manitoba	81	67	64	1,348	1,088	1,081
Saskatchewan	38	38	34	644	522	607
Alberta	78	57	55	1,429	1,513	1,715
British Columbia	136	103	90	2,950	2,795	2,940
Total	837	673	614	14,467	14,649	16,688

10.23 Exports and imports of furs, by kind, years ended June 30, 1971-72 and 1972-73 (thousand dollars)

Kind of fur	1971-72 fur season			1972-73 fur season		
	Britain	United States	All countries	Britain	United States	All countries
EXPORTS						
Undressed						
Beaver	2,163	938	7,126	2,045	1,526	9,153
Chinchilla	—	100	123	—	170	197
Ermine (weasel)	26	—	28	57	1	74
Fisher	59	146	317	101	214	601
Fox, all types	469	769	1,727	511	978	2,953
Lynx	401	792	1,848	470	1,506	4,064
Marten	171	431	699	75	518	913
Mink	1,075	5,282	12,093	1,112	7,294	14,043
Muskrat	1,542	98	2,068	2,765	90	3,342
Otter	71	83	507	44	69	459
Rabbit	—	10	14	—	14	14
Seal	441	3	1,672	451	3	1,907
Squirrel	228	—	228	227	—	276
Wolf	246	193	545	294	577	1,674
Other	207	191	778	423	299	1,489
Dressed						
Mink	7	41	355	14	22	552
Raccoon	—	—	24	—	14	49
Fur plates, mats, etc.	—	67	153	—	33	88
Other	41	298	802	53	268	841
Fur goods apparel	1,183	3,245	18,217	2,226	3,962	24,417
Total	8,330	12,687	49,324	10,868	17,558	67,106
IMPORTS						
Undressed						
China and Jap mink	158	9	516	314	—	526
Fox	1,504	1,202	5,209	1,441	1,716	7,168
Kolinsky	80	14	244	134	—	228
Mink	1,661	4,097	11,289	1,823	4,723	13,560
Muskrat	—	4,028	4,028	2	5,679	5,681
Persian lamb	176	105	365	76	79	528
Rabbit	1	—	2	—	10	21
Raccoon	7	2,941	2,951	12	5,383	5,408
Other	271	1,648	5,416	416	3,276	6,528
Dressed						
Hatters' furs	—	177	289	—	259	398
Mink	21	894	974	119	1,322	1,859
Seal	—	1,116	1,292	—	1,294	1,416
Sheep and lamb	1,372	1,439	3,949	1,124	1,498	3,758
Fur plates, mats, etc.	166	367	1,326	160	827	2,061
Other	128	448	1,120	124	701	1,584
Fur goods apparel	157	93	900	156	220	1,290
Total	5,702	18,578	39,870	5,901	26,987	52,014

Sources

10.1 - 10.4 Information Services Branch, Department of the Environment.

10.5 - 10.19 Manufacturing and Primary Industries Division, Industry Statistics Branch, Statistics Canada.

10.20 - 10.23 Agriculture Division, Industry Statistics Branch, Statistics Canada.

Chapter 11

Agriculture

11.1 Trends and highlights, 1973

Early in 1973 it was announced that Canada had exported \$2,135 million in agricultural products in 1972, exceeding sales of \$2 billion for the first time.

In March the federal government removed the 4 million-acre limit on total acreage eligible for the \$10 subsidy for added production under the three-year Grassland Incentive Program designed to encourage livestock producers to grow more forage. Maximum compensation payable for cattle slaughtered in disease control measures under the provisions of the Animal Contagious Diseases Act was increased to \$300 from \$200 for each purebred animal and to \$150 from \$120 each for grade cattle. Federal grants totalling approximately \$87,000 were awarded to the Maritime Provinces to help re-establish strawberry crops killed during the winter of 1971-72. In October a federal subsidy amounting to one third of the total construction cost, to a maximum of \$500,000, of new specialized fruit and vegetable storage facilities was announced.

The Farm Credit Corporation reported a substantial rise in farm lending. During the 1971-72 fiscal year loans increased 62.3% over the previous year and in 1972-73 they rose by another 115% to reach \$400.6 million. Three more provinces — Manitoba, Quebec and Saskatchewan — signed agreements with the federal government to implement the Small Farm Development Program. Established in February 1972, the program provides farm management and counselling services to participating farmers and extends credit to small farm operators to purchase land required to develop a profitable business.

A New Crop Development Fund was introduced at the Western Economic Opportunities Conference in Calgary, Alta. by the Minister of Agriculture. The federal government contributed \$1 million to the fund for the development of new crops, the adaptation of new varieties to farm conditions and the development of new protein sources.

As part of an interim national feed grains policy, the Agricultural Products Board offered to buy feed oats and barley in the Prairie Provinces at prices half way between the Wheat Board's initial price and its expected final price. The buying program was introduced to ensure that Prairie producers would not be forced by market conditions to dispose of their feed grains at depressed prices.

Permits were granted to 722 applicants to import 876 cattle from Europe, an increase of 109 applicants over the previous year. Canadian bovine semen was exported to Australia for the first time in 1973. A departmental report on artificial insemination showed that 1,216,928 cows were artificially bred in Canada in 1972, an increase of more than 94,000 over 1971.

Following the lifting of a retail price freeze on beef in the United States more Canadian beef was placed on the market and prices dropped. In the early fall an influx of American cattle depressed the Canadian market further and the government responded with a surtax on imported beef.

Tariffs removed in February were also reimposed later in the year when Canadian producers of specific commodities, e.g. cherries and tomatoes, were threatened with cheaper imports.

In the fall the government announced that it would pay a consumer subsidy of five cents a quart on fluid milk in an attempt to limit price increases at the retail level. By the end of the year all provinces had reached agreement with the federal government to implement the subsidy. Twice during the year the subsidy for manufacturing milk was raised; the payments, amounting to a total increase of about \$10 million, were intended to provide dairy farmers with cash to meet the costs of buying and storing feed needed to keep winter production up to demand.

A national Turkey Marketing Agency was established in December following a year of public hearings.

In June the Canada Department of Agriculture bought a farm near New Dundee, near Kitchener, Ont., as the site for a new Record of Performance testing station for boars. A new agricultural research and extension building was officially opened July 24 at Charlottetown, PEI.

The federal capital gains tax on farms passing from one generation to the next was removed and the capital gains tax on quotas modified. Under other tax amendments a livestock producer may now count a change in his herd size as a change in inventory.

11.2 Federal government services

The Canada Department of Agriculture dates from Confederation in 1867. It was established as an outgrowth of the Province of Canada's Bureau of Agriculture, which was set up in 1852. The Department's authority lies in the British North America Act, 1867, which states, in part, "in each province, the legislature may make laws in relation to agriculture in the province" and "the Parliament of Canada may from time to time make laws in relation to agriculture in all or any of the provinces; and any law of the legislature of a province relative to agriculture, shall have effect in and for the province as long and as far as it is not repugnant to any Act of the Parliament of Canada".

A Department of Agriculture with a Minister of Agriculture at its head was accordingly established as part of the Government of Canada, and departments of agriculture headed by provincial Ministers were also set up by the provincial governments. In the Yukon Territory and Northwest Territories, agriculture is of little importance.

11.2.1 Canada Department of Agriculture

Activities of the Canada Department of Agriculture (CDA) cover three broad areas: research, promotional and regulatory services and assistance programs. Research aims at solving practical farm problems by applying fundamental scientific research to all aspects of soil management, agricultural engineering, and crop and animal production. Promotional and regulatory services attempt to control and eradicate crop and livestock pests and register chemicals and other materials used for these purposes. Also included are inspection and grading of agricultural products and the establishment of crop and livestock improvement policies. Assistance programs cover some of the sphere of price stability, emergency relief, crop insurance, compensation, and income security in the event of crop failure.

The Department has seven branches: Research, Production and Marketing, Health of Animals, Economics, Food Systems, Financial and Administration, and Personnel Administration. Its organization also includes the Canadian Grain Commission, Crop Insurance Division and Prairie Farm Assistance Administration. In addition, there are a number of agencies that are independent of, but closely allied with, the Department and are responsible to the Minister of Agriculture. These include the Agricultural Stabilization Board, Agricultural Products Board, Canadian Dairy Commission, Canadian Livestock Feed Board, Farm Credit Corporation and National Farm Products Marketing Council.

The Research Branch is responsible for research on agricultural production problems although some phases of research are carried on by the Economics Branch, the Health of Animals Branch and the Grain Research Laboratory of the Canadian Grain Commission. The activities of the Branch are carried out at 26 Research Stations, 11 Experimental Farms, six Research Institutes, three Research Services, and at a number of substations and project farms in all 10 provinces. General direction and co-ordination of the program are provided by headquarters of the Branch, located in Ottawa. Approximately 900 professional staff are employed, representing all the biological and physical sciences that contribute to the solution of agricultural production problems.

With the increasing complexity of modern agricultural production and competitive pressures, efficiency and reduced cost per unit of production become increasingly important. Therefore emphasis in the research program continues to be on development of improved varieties of plants and animals, on production practices that will maximize yields and reduce costs and on methods of controlling insects, diseases and weeds.

Through the years Research Branch scientists have produced new varieties of cereal, forage and horticultural crops to meet new market requirements and reduce the hazards of production. The search continues for even better material to overcome the limiting factors of a northern climate including a short growing season, frost hazards, drought, insect pests and diseases. At the same time, efforts are being made to develop plants that will respond favourably to long days and the high light-intensity of many parts of Canada. As an aid to determining the effects of climate on crops and providing a basis for forecasting the possibilities of success with

new crops in a given area, agrometeorology has become increasingly important. Particular attention is focused on new crops and outstanding success has been achieved; a highlight is the development of new varieties of rapeseed with oil quality-tailored to specification. More than 80 new varieties of crops have been developed and put into commercial production in the past 10 years, including almost all of the cereal crops produced in western Canada.

Feed grains and forage crops are receiving special attention for economical livestock production. The application of genetics to animal improvement and better animal nutrition are the two main avenues being explored to improve livestock production. More recently increasing emphasis has been placed on developing procedures to improve the reproductive efficiency of all classes of stock. Additional attention is also being given to the disposal of animal wastes, a problem that is increasing in severity as livestock concentrations become larger.

An aggressive battle is being fought to control crop diseases and pests. Although chemicals have proved to be a potent weapon, the added pollution has caused concern and other methods of control are now receiving greater attention. The development of resistant varieties, the use of parasites, predators, insect pheromones, and radiation-induced sterility and the destruction of insects by non-chemical means are all in the arsenal of research workers. In this, as in most other aspects of agricultural research, the team or inter-disciplinary approach is being used more and more.

Agriculture has made outstanding advances in the past quarter-century in increasing output per man. This has been made possible through farm mechanization on a large scale. To assist this advance, the Research Branch has expanded its agricultural engineering staff to deal with specific problems and to provide more liaison with universities and provincial extension officers. The Branch conducts a continuing soil survey in all provinces in co-operation with provincial departments of agriculture and with faculties of agriculture in universities; it also conducts a program of research on soil fertility and cultural practices, with a view to using agricultural soils most effectively and conserving them for the future.

In addition to research done by Branch staff, considerable co-operative work is undertaken with staff of university faculties and provincial governments. Through operating and extramural grants, support is given to research workers at universities. Close liaison is maintained with these agencies to avoid unnecessary duplication of programs and special attention is given to maintaining contact with provincial extension officers. Branch establishments across the country are represented on provincial committees concerned with making recommendations on crop varieties, fertilizers, cultural practices, pest control, animal management, and other problems. Such collaboration ensures that research results are made available to extension officers and to producers as quickly as possible.

The Production and Marketing Branch conducts many of the promotional and regulatory functions of the Department. Six specialized divisions administer legislation and policies in the production and marketing of livestock, poultry, fruits and vegetables, dairy and plant products, and policies concerned with the control of disease in plants.

The Livestock Division administers legislation dealing with the grading of meat, wool and fur, with the registration of livestock pedigrees, with performance testing of cattle and hogs and with the supervision of race-track betting. Other activities include the promotion of livestock improvement and the compilation of market statistics. The Poultry Division carries out the policies of the national poultry breeding program, including Record of Performance for poultry, and hatchery inspection, as well as administering the regulations for the grading of poultry products. The Fruit and Vegetable Division administers legislation having to do with the grading of fruit and vegetables in both fresh and processed form, and with maple products and honey. It is also responsible for the licensing of interprovincial and international dealers and brokers who deal in fresh fruit and vegetables.

The Dairy Division administers legislation covering grades and standards for dairy products, including butter, cheese, concentrated milk products and ice cream. The Plant Products Division administers Acts and Regulations respecting seeds, feeds, fertilizers and pest-control products, conducts field inspections of seeds and maintains regional testing laboratories for agricultural product samples taken by Branch inspectors. The Plant Protection Division is responsible, under the Destructive Insect and Pest Act, for safeguarding against the introduction of serious plant insects or diseases into Canada or their spread in Canada, for certifying freedom from disease and pests in plant exports, and for seed potato certification. Other

organizational units include the Grains and Special Crops Division, responsible for cereal grains and special crops, and the Marketing and Food Advisory services.

The Health of Animals Branch administers the Animal Contagious Diseases Act, the Meat Inspection Act and the Humane Slaughter of Food Animals Act, and operates laboratories for the study of animal diseases. It is composed of four Divisions: Contagious Diseases, Meat Inspection, Animal Pathology, and Education and Development. The Contagious Diseases Division controls contagious diseases of animals through preventive measures of inspection and quarantine of imported livestock and restricted commodities such as meat, farm products and other possible sources of infection; through conducting disease eradication programs, notably of bovine tuberculosis, brucellosis and Johne's disease; through the control and eradication of serious animal diseases, such as Newcastle disease, hog cholera, rabies and anthrax when outbreaks occur; and through inspection and certification as to health of livestock for export. The Meat Inspection Division conducts antemortem examinations; ensures the application of strict humane slaughter regulations for all food animals; conducts continuous postmortem examinations of animals slaughtered at packing plants operating under the Meat Inspection Act; and ensures maintenance of sanitary standards during processing of the products, accurate labelling, and the proper kind and use of ingredients and preservatives, in order that only wholesome, unadulterated meats and meat food products will be marketed.

The Animal Pathology Division consists of the Animal Diseases Research Institute at Hull, Que., the Animal Diseases Research Institute (Western) at Lethbridge, Alta., and seven other laboratories which conduct research and investigations on diseases of animals. The Division produces the biological products required in the control programs of the Branch; provides diagnostic services for diseases of domestic and wild animals; offers a consultation service regarding veterinary biologics and other agents used in the control of animal diseases; and assists in training departmental officers and technicians, as well as veterinarians from other lands. The Education and Development Division provides comprehensive training programs to meet the technical and scientific needs of the Branch and sponsors the attendance of its officers on other courses, and is involved in recruitment and liaison with other educational and professional institutions and organizations.

The Economics Branch provides the economic material essential for the formulation of comprehensive policies and programs to develop the agriculture and food sector of the Canadian economy. The Branch provides economic analysis and consulting services for the Minister, the Department and federal agencies. It conducts economic research, projects trends and prospects for agriculture, disseminates economic information, analyzes policy proposals, and plans and operates national economic programs for agriculture.

The Economics Branch consists of the Director General and Branch Executive, the Program Coordination and Development Group, the Policy Advisory Group and five divisions. The Marketing and Trade Division is concerned with the efficiency and development of markets for Canadian farm products; it also advises on trade policies and problems and prepares information on the agricultural economic outlook. The Farm and Rural Development Division helps Canadian farmers maintain profitable operations, keeps in touch with the problems of rural communities and operates the Small Farm Development Program. CANFARM Division provides a national computerized farm accounting service. The Research Division investigates the economics of production, marketing and resource use in agriculture and forecasts economic trends. There is also an Administration Division. Four regional research offices serve the Maritime Provinces, Quebec, the Prairie Provinces and British Columbia; the CANFARM offices are at Guelph.

The Food Systems Branch was established in late 1972 to develop marketing plans for various commodities through the planning, development and co-ordination of programs within the Canada Department of Agriculture and with other parts of the food system. The Branch works on a commodity basis with all segments of the food industry, including producers, processors and distributors. Its responsibilities include monitoring and assessing food systems programs.

Administration, liaison and information. The Financial and Administration Branch provides central advisory and specialized staff services for the financial and business management of the Department and advises the Senior Executive in developing financial and administrative policies and programs. Personnel policies and programs for approximately 10,000 employees

of the Department, including scientific and professional groups, technical, administrative and other support staff at various locations across Canada, are conducted by the Personnel Administration Branch.

The International Liaison Service, established in 1969, is the Department's "foreign affairs" arm. It maintains liaison on behalf of the Department with international agencies such as the Food and Agriculture Organization, the Organization for Economic Co-operation and Development and the World Food Programme. The Service co-ordinates the Department's participation in these organizations, and in aid and development programs undertaken by the Canadian International Development Agency, the International Development Research Centre and international foundations. It also reports regularly on agriculture policy trends abroad and evaluates the impact of these changes on Canadian agriculture and trade.

The Information Division gathers and disseminates information on the research, development and regulatory work of the Department, giving service to the news media, to agricultural extension workers and directly to the public through publications, press and radio releases, television material, motion pictures and exhibits.

11.2.2 Farm assistance programs

Basic to the concept of Canada's national agricultural policy is the premise that a stable agriculture is in the interests of the national economy and that farmers as a group are entitled to a fair share of the national income. Consequently the Canada Department of Agriculture has conducted long-term programs designed to aid agriculture through the application of scientific research and the encouragement of improved methods of production and marketing. Over the years, as conditions have warranted, programs have been initiated to deal with special situations. Mitigating the effects of crop failure, assisting the movement of western feed grains to eastern Canada and British Columbia, reclaiming soil in the Maritime Provinces and combating drought in the agricultural areas of Manitoba, Saskatchewan and Alberta are examples.

Although much has been accomplished and is still being accomplished by these measures, changes in the past two decades have dictated the need for a different approach to some problems. Large-scale mechanization and, in some segments of the industry, automation have reduced manpower requirements significantly; the number of farms has declined but the size of farms has increased; marketing and income problems have taken different forms; and a decline in some rural communities has occurred together with problems of regional disparity. Legislation enacted to meet these situations includes price support (Agricultural Stabilization Act), dairy market and producer income stabilization (Canadian Dairy Commission Act), crop insurance (Crop Insurance Act), feed grain assistance (Livestock Feed Assistance Act), credit facilities (Farm Credit Act, Farm Syndicates Credit Act, Farm Improvement Loans Act), marketing assistance (Canada Grain Act, Agricultural Products Board Act, National Farm Products Marketing Council) and other forms of assistance to meet emergency or long-term conditions (Prairie Farm Assistance Act, Prairie Grain Advance Payments Act, Agricultural and Rural Development Act and Prairie Farm Rehabilitation Act). All these measures are administered by the Canada Department of Agriculture or by organizations responsible to the Minister except the Farm Improvement Loans Act (administered by the Department of Finance), Prairie Grain Advance Payments Act (Department of Industry, Trade and Commerce) and the ARDA and PFRA programs (Department of Regional Economic Expansion) and the Small Farm Development Program.

The Canadian Grain Commission was established in 1971 under the Canada Grain Act replacing the former Board of Grain Commissioners for Canada. For more detailed information on this Commission see Section 11.8.1.2.

The Agricultural Stabilization Board, established in 1958 by the Agricultural Stabilization Act which at the same time repealed the Agricultural Prices Support Act, 1944, is empowered to stabilize the prices of agricultural products to assist the agricultural industry in realizing fair returns for labour and investment, and to maintain a fair relationship between prices received by farmers and the costs of goods and services that they buy.

The Act provides that, for each production year, the Board must support, at not less than 80% of the previous 10-year average market or base price, the prices of nine commodities: cattle, hogs and sheep; butter, cheese and eggs; and wheat, oats and barley produced outside the prairie areas as defined in the Canadian Wheat Board Act. Other commodities may be sup-

ported at such percentage of the base price as may be approved by the Governor in Council. Since the Act came into force the following farm products, other than the nine named, have been supported at one time or another: honey, potatoes, soya beans, sunflower seeds, sugar beets, apples, peaches, wool, fowl, blueberries, rutabagas, carrots, sour cherries, raspberries, asparagus, tomatoes, milk for manufacturing, casein, cream, fluid milk, fluid cream and skim milk powder. The Board may stabilize the price of any product by an offer-to-purchase, by a deficiency payment or by making such payment for the benefit of producers as may be authorized.

In stabilizing prices of certain commodities by means of assistance payments, the price stabilization program has been assisting the agricultural industry to balance production and demand. During the period of adjustment the Board guarantees a minimum average return to producers for their product on a national average basis.

The cost of stabilization programs under the Act has averaged approximately \$85.5 million a year. The Board has available a revolving fund of \$250 million, according to the Act; losses incurred are made up by Parliamentary appropriations and any surplus is paid back to the Consolidated Revenue Fund. An advisory committee named by the Minister of Agriculture and composed of farmers or representatives of farm organizations assists the Board in its operations.

The Agricultural Products Board was established in 1951 to administer contracts with other countries for the purchase or sale of agricultural products and to perform other commodity operations as Canadian needs may dictate. The Board's recent activities have included the purchasing of surplus Canadian commodities with resulting improvement in producer prices. Some of these commodities have been processed, packaged and delivered to the World Food Programme as part of Canada's commitment to the Food and Agriculture Organization of the United Nations.

The Crop Insurance Act was passed in 1959 (RSC 1970, c.C-36) to permit the federal government to assist the provinces in making all-risk crop insurance available to farmers across Canada on a shared-cost basis under the terms and conditions of federal-provincial agreements. Crop insurance is intended to protect the farmer against unforeseen losses by spreading their impact over a number of years. The initiative for establishing crop insurance rests with the provinces and schemes may be organized to meet provincial requirements for insurable crops and areas.

Under the Act as amended the federal government contributes a portion of premium costs and/or administration costs and shares the risk by providing loans or re-insurance when indemnities greatly exceed premiums and reserves. Commencing with the 1973 crop year the farmers pay 50% of the total premiums required to make the schemes self-sustaining. The remainder is contributed by the federal government if the province elects to pay all administrative costs, and is shared equally between the provincial and federal governments if the province elects to share the administrative costs equally.

In the 1973 crop year about 73,200 farmers purchased \$375 million in crop insurance coverage under 112 plans. Premiums totalled \$32.8 million (including government contributions) and indemnities to be paid out are estimated to be \$22.3 million, for a loss-to-premium ratio of .68. The number of farmers participating increased by 49% over 1972 while coverage increased by 128%. The most significant increase in participation and coverage occurred in Saskatchewan.

Crops harvested in most areas of Canada were average in 1973. However, yields were reduced by rain and snow during the harvest period in the Peace River areas of British Columbia and Alberta and in northern Alberta, by hailstorms in the Prairie grain-producing areas and by excessive rain in Ontario and Quebec during the spring and early summer and in Nova Scotia during the growing season.

The Prairie Farm Assistance Act, 1939 (RSC 1970, c.P-16) was designed to provide for direct cash payments by the federal government on an acreage-and-yield basis to farmers in areas of low crop yield in the Prairie Provinces and the Peace River area of British Columbia.

The program has been phased out gradually since 1971, when the collection of levies was suspended, and is scheduled to terminate at the end of the 1973-74 crop year as crop insurance schemes take over many of its functions. During the 1973-74 crop year benefits were limited to growers located in certain areas of Alberta where crop insurance was not available.

The Prairie Farm Assistance Administration was also responsible for administering payments under the Grassland Incentive Program which offers a subsidy of \$10 an acre to farmers who increase their acreage of perennial forage. Payments made to farmers under this program to December 31, 1973 amounted to \$42.2 million on about 4.39 million acres.

The Canadian Dairy Commission was established by the Canadian Dairy Commission Act and became operative on April 1, 1967. The affairs of the Commission are directed by three Commissioners, and its objects are "to provide efficient producers of milk and cream with the opportunity of obtaining a fair return for their labour and investment and to provide consumers of dairy products with a continuous and adequate supply of dairy products of high quality".

To perform its functions, the Commission is authorized to stabilize prices of major dairy products through offers to purchase at fixed prices, thus establishing stable prices in the interests of both producers and consumers. The Commission may borrow from the Minister of Finance the funds required for such purchases to a maximum of \$100 million, which must be repaid.

The Commission administers the payment of funds provided by the government for subsidies to producers of manufacturing milk and cream. These payments supplement returns to producers from the market and permit market prices to be kept at reasonable levels. Each producer is eligible for subsidy on shipments covered by his market share quota. The Commission, indirectly, pools returns to producers from products sold on the domestic and export markets through an export equalization fund. Money for this is collected by levies from producers in provinces under the Market Sharing Quota Program — Prince Edward Island, Quebec, Ontario, Manitoba, Saskatchewan, Alberta and British Columbia — and remitted to the Commission. The funds are used to equalize export prices with domestic prices, for any products that must be exported below domestic prices. Further details on the activities of the Commission with regard to marketing may be found in Section 11.8.2.2.

The Livestock Feed Assistance Act established the Canadian Livestock Feed Board, which is a Crown agency reporting to Parliament through the Minister of Agriculture. The Board has four main objectives: to ensure that feed grain is available to meet the needs of livestock feeders; that adequate storage space in eastern Canada is available for feed grain to meet the needs of livestock feeders; that the price of feed grain in eastern Canada and in British Columbia remains reasonably stable; and that there be fair equalization of feed grain prices in eastern Canada and in British Columbia.

To these ends, the Board may make payments related to the cost of feed grain storage and transportation. Feed grain transportation assistance payments have been made since 1941. Under the Feed Grain Assistance Regulations of the Appropriations Act, the original program was initiated in October 1941 to provide a market for western feed grains and to enable livestock feeders in eastern Canada and British Columbia to obtain supplies at a cost that would maintain livestock and poultry production at a high level. Since April 1967, the freight subsidy has been administered by the Canadian Livestock Feed Board under the authority of the Livestock Feed Assistance Act. This program has been modified over the years to encourage better utilization of both transport and storage facilities. Initially, it was applied only to feed grains produced in the Prairie Provinces and designated for domestic livestock consumption in eastern Canada and British Columbia. More recently it has been extended to the movement of Ontario corn and wheat into the Atlantic Provinces and Ontario wheat into Quebec. The total subsidy of approximately \$20 million a year covers roughly half the transportation and handling costs of moving about 3 million tons of eligible feed grains.

The Livestock Feed Assistance Act also contains provisions for the Board to buy, transport, store and sell feed grains when authorized by the Governor in Council.

The Farm Credit Corporation was established in 1959 as successor to the Canadian Farm Loan Board set up in 1929. The Corporation, a Crown agency, reports to Parliament through the Minister of Agriculture.

Two types of long-term mortgage loans are available under the Farm Credit Act. Under Part II loans may be made up to 75% of the appraised farm value not exceeding \$100,000 for any farmer alone or jointly with others in a single farming business. Under Part III supervised loans may be made to young farmers up to 75% of the appraised value of land and chattels, not exceeding \$100,000 for any farmer alone or jointly with others in a single farming business;

special provision is made under this Part for loans up to 90% of farm assets where the owner-operator is under 35 years of age and management will be considerably above average. Under both Parts applicants must be principally occupied in farming and be of legal age to enter into a mortgage agreement. Individual applicants under Part III must be less than 45 years of age. Loans may be made only to Canadian citizens or those with landed immigrant status. The interest rate is set by Order in Council and varies with the cost of money to the Corporation. The repayment period under both Parts is up to 30 years.

The Corporation has 116 field offices at which are based 198 credit advisers responsible for informing local farmers about the services available, for pre-loan counselling on credit use, farm planning and farm management, for accepting applications and for making farm appraisals.

In addition to the amounts repaid by borrowers, funds for lending to farmers may be borrowed by the Corporation from the Minister of Finance. The aggregate amount of such borrowings outstanding at any time may not exceed 25 times the capital of the Corporation. This capital was raised by amendment to the Act in 1972 from \$56 million to \$66 million. There were 68,255 loans to the amount of \$1,276 million outstanding as at March 31, 1973. During the 1972-73 fiscal year the Corporation approved 5,296 loans for \$186.3 million.

The Farm Syndicates Credit Act authorizes the Farm Credit Corporation to lend to qualified groups of farmers (referred to as syndicates). A syndicate is a group of three or more farmers, the majority of whom have farming as their principal occupation, who have signed an agreement acceptable to the Corporation with respect to the joint purchase and use of machinery, equipment or buildings which can be used profitably by them in their farming operations. Co-operative farm associations and certain farming corporations may qualify as syndicates for loans without the members entering into a formal agreement.

A syndicate may borrow up to 80% of the cost of machinery, buildings (including site and other improvements) and installed equipment suitable for joint use, to a maximum of \$15,000 a member or \$100,000, whichever is the lesser. Loans are repayable over a period not exceeding 15 years for buildings and installed equipment, and seven years for mobile machinery. The interest rate is based on the cost to the Corporation of funds advanced by the Minister of Finance, and its expenses in servicing loans. There is an initial charge of 1% on the amount of each loan. Security is provided by a promissory note signed by each syndicate member, and such other security as may be required. Up to March 31, 1973 the Corporation had approved loans for 794 syndicates totalling \$13.1 million. During the 1972-73 fiscal year the Corporation approved 114 loans for \$2.0 million.

The Small Farm Development Program, initiated by the Canada Department of Agriculture in 1971 with the establishment of a \$150-million fund to cover the first seven years of operation, is available to the provinces by agreement. It offers extended credit facilities to operators of small farms for the purchase of additional land or equipment to enable them to remain on the land and develop a profitable business; at the same time, the program benefits owners of small farms who choose to give up farming by allowing an adjustment grant in addition to the selling price of their land. Management and counselling services are also available.

The Land Transfer Plan of the Small Farm Development Program is administered by the Farm Credit Corporation acting as agent for the Canada Department of Agriculture. Under this Plan special credit is made available for the purchase of land under agreement for sale. Unless the federal-provincial agreement specifies otherwise, the maximum permissible sale price is \$20,000, with a down payment as low as \$200 and a repayment period of not more than 26 years. The purchaser must be a Canadian citizen or landed immigrant who is the owner of a farm or has been a tenant for at least three years and whose principal occupation is the operation of that farm. He must have less than \$60,000 of assets and must buy from a vendor who is eligible for the assistance grant under the plan.

To be eligible for the grant, consisting of \$1,500 plus 10% of the sale price of the farm up to \$20,000 and not exceeding a maximum of \$3,500, a vendor must at the date of commencement of the program be the owner of a small farm and be principally occupied in the operation of that farm. He must be able to support himself and his family at least as well after the sale as before, and he must sell all or substantially all of his land to a Canadian citizen or landed immigrant who will not operate the property as a separate uneconomic farm. The vendor is not eligible for a grant if the property sale price exceeds \$20,000 or such other maximum as may

be established in the agreement with a particular province. Grants may be in cash or in the form of an annuity.

The Corporation maintains a listing service in its field offices to help bring sellers and buyers together. In special circumstances where no other purchaser is immediately available, the Corporation may purchase farm land for future resale at a price not exceeding 90% of the Corporation's estimate of its market value within the limits prescribed for the province where the property is situated. The seller will be eligible for a grant of \$1,500 plus 10% of the Corporation's estimate of the market value to a maximum of \$3,500.

The National Farm Products Marketing Council was established by the Farm Products Marketing Agencies Act in 1972 to advise the Minister of Agriculture on all matters pertaining to the establishment of marketing agencies. It reviews their operations and assists them in promoting more effective marketing of farm products and co-ordinates related activities of the provincial governments as well as the efforts of producers to establish marketing plans. The first application for the establishment of a national agency was submitted by egg producers and the Canadian Egg Marketing Agency was created in December 1972 and was followed by the Canadian Turkey Marketing Agency which was proclaimed in December 1973.

The Farm Improvement Loans Act (RSC 1970, c.F-3), administered by the Department of Finance, is designed to facilitate the availability of credit by way of loans made by the chartered banks and other lenders designated by the Minister of Finance to assist in almost every conceivable purchase or project for the improvement or development of a farm. It includes the purchase of agricultural implements, the purchase of livestock, the purchase and installation of agricultural equipment or a farm electrical system, the erection or construction of fencing or works for drainage on a farm, and the construction, repair or alteration of farm buildings including the family dwelling, and the purchase of additional land for the purpose of farming. Credit is provided on security related to the purchase or project and on terms suited to the individual borrower.

The legislation, originally operative for three years (1945-48), has been continued through extensions, usually for three-year periods. The current extension is for the period July 1, 1971 to June 30, 1974. The maximum repayment period for land purchase is 15 years, for implements five years, for vehicles three years, and for all other purposes 10 years. The interest rate is prescribed in the regulations and is adjustable semi-annually on April 1 and October 1 of each year to reflect changes in the levels of interest rates generally. The borrower is required to provide from 10% to 25% of the cost of his purchase or project, depending on the loan category to which it belongs. The federal government guarantees each lender against loss sustained and an amount of up to 90% of the first \$125,000 lent, up to 50% of loans in excess of \$125,000 but not exceeding \$250,000, and up to 10% of loans in excess of \$250,000 made by that lender during a lending period. This guarantee does not apply to any loan made after the aggregate of all loans made by all banks in a given period reaches an amount fixed by statute. The current maximum stands at \$900 million which may be lent by the chartered banks and a limit of \$300 million which may be lent by other designated lenders. From inception of the program to December 31, 1973, 1.7 million loans amounting to about \$3,000 million were made. During the same period, payments were made to the banks under the guarantee provision in respect of 5,009 claims amounting to \$5.1 million, representing a loss ratio of less than one fifth of one percent. The maximum loan or amount that may be outstanding to a borrower at any one time is \$25,000.

The Prairie Grain Advance Payments Act, which came into force on November 25, 1957 (RSC 1970, c.P-18) and was subsequently amended, provides for interest-free advance payments to producers in western Canada for farm-stored threshed grain (wheat, oats and barley). The rate of advance payment a bushel for wheat, oats and barley is prescribed by regulation each year. The rate approximates two thirds of the initial payment on the grade of each grain which it is estimated will be delivered in the greatest volume by producers to country elevators during the crop year. The maximum total advance is governed by quota levels also prescribed by regulation and may not exceed \$6,000 for any individual producer for the crop year. The rate of repayment is the same as the rate of advance. Repayment is effected by deducting approximately two thirds of the initial payment for wheat, oats and barley delivered subsequent to the loan until the producer has discharged his advance.

The Act also contains provisions for special advance payments covering unharvested

grain and the drying of grain. The maximum total advances receivable for these special advances are \$3,000 and \$600 respectively.

11.3 Provincial government services

11.3.1 Departments of agriculture

Newfoundland. Government agricultural services in Newfoundland are operated by the Department of Forestry and Agriculture. The Agriculture Division consists of six directors and a staff of 125 under an Assistant Deputy Minister of Agriculture. For administrative purposes, the province is divided into a number of districts with an agricultural representative located in each. Specialists in charge of different phases of agricultural development visit each district on assignment from the St. John's office.

Departmental policies in support of the agricultural industry include: a bonus of \$125 an acre on land cleared by privately owned equipment; distribution of ground limestone at a subsidized rate; payment of bonuses on purebred sires; financial assistance to agricultural societies, marketing organizations, and exhibition committees; and grants in aid of constructing vegetable storage facilities.

Favourable marketing conditions and departmental assistance and loans under the provincial Farm Development Loan Board, the Newfoundland Marketing Board and the Newfoundland Farm Products Corporation have contributed to increased output of agricultural products in the province.

Prince Edward Island. The Prince Edward Island Department of Agriculture and Forestry is composed of the following branches and divisions: the Economics, Statistics and Marketing Branch; the Extension Services Branch, which consists of the Farm Management Division, the Information Section, the District Agricultural Extension Division, the 4-H Division and the Home Economics Division; the Production Services Branch, which consists of the Soils and Crops Division and the Veterinary and Livestock Division; and the Forestry Branch, which consists of the Forest Nursery Division and the Bunbury Nursery Division. The latter is described in more detail in Chapter 10.

Nova Scotia. The Nova Scotia Department of Agriculture and Marketing directs the government's agricultural program by implementing provincial agricultural policies. The Department is administered by a Minister, Deputy Minister and branch directors concerned primarily with extension and economics, horticulture and biology, livestock services, market development, soils and crops, and formal agricultural education through the Nova Scotia Agricultural College located in Truro. The Department is particularly interested in encouraging rural people to help themselves through such organizations as the Nova Scotia Federation of Agriculture, the Nova Scotia Fruit Growers' Association and other commodity-oriented groups.

New Brunswick. Provincial government agricultural policy and programs in New Brunswick are administered and directed by the Department of Agriculture and Rural Development. Under the Minister of Agriculture and Rural Development, the Department is administered by a Deputy Minister, an Assistant Deputy Minister and the directors of branches concerned with extension, livestock and dairying, veterinary services, poultry, plant industry, agricultural engineering, home economics, credit unions and co-operatives, and rural development. The Department also has a Farm Economics Division and an Information Division, as well as a Farm Adjustment Board, a Natural Products Control Board, a Dairy Products Commission, a Forest Products Commission and a Planning and Development Branch.

Quebec. The aim of the Quebec Department of Agriculture and Colonization is to promote agricultural development by making the best possible use of the province's resources through methods and techniques most appropriate to achieving its real and projected needs. Programs and regulations are constantly updated to meet changing situations and the modernization of agriculture is of particular concern.

The Department is headed by the Minister who is also responsible for the Quebec Sugar Refinery, the Farm Credit Bureau, the Agricultural Marketing Authority and the Crop Insurance Administration, each of which is operated by an autonomous board of directors. Under the general direction of the Minister, the Deputy Minister is responsible for administration of the Department, for policy co-ordination and for the execution of programs established

under these policies. Three Assistant Deputy Ministers are responsible for the principal Branches of the organization: Production; Research, Education and Administration; and Marketing.

The Production Branch is the largest in the Department and its major services and divisions are made directly available to the farmer. The Branch is responsible for veterinary services, animal husbandry, regional offices and laboratories, special projects, engineering and plant products. Veterinary services include work in the health of animals field, meat inspection and the provincial laboratories at Quebec and St-Hyacinthe as well as the veterinary medicines distribution centre at St-Hyacinthe; this service is also responsible for the sanitary inspection of meats in slaughterhouses and meat packing or processing plants operating under the "Quebec Approved" program. The animal husbandry section includes work in artificial insemination and animal diseases. The engineering section covers agricultural machinery, mechanized operations, farm buildings and agricultural water services. The plant production section covers field crops, horticulture, damage to uninsured crops, and the soils and plant husbandry laboratory. Agricultural extension and young farmers programs are administered by the regional offices and laboratories of the Production Branch, which are also charged with the operation of joint programs.

Through the Research, Education and Administration Branch, the Department carries out practical research directly applicable to agriculture at the farm level, pursues an agricultural education program and provides for efficient administration of the budget.

Research and education cover crop protection, soils, apiculture and maple products, research stations and the La Pocatière and St-Hyacinthe institutes of agricultural technology. The Assistant Deputy Minister in charge of the Branch is the president of the Quebec Research Council, the co-ordination and promotion centre for most of the agricultural research carried out in Quebec. The Council directs research into specific fields to meet the special needs of Quebec agriculture. It maintains liaison with federal government research organizations and in drawing up its priorities consults with the Quebec Plant Products Board and the Quebec Animal Production Board.

The administrative and financial services attached to this Branch include archives, land grants, travelling expenses, supplies, and grants and awards. The personnel section, which makes up the rest of the Branch, includes farm labour and civil defence.

The Marketing Branch, through the dual nature of its services and divisions, serves both agriculture and the consumer. The marketing aspect of the Branch includes economic studies (production, distribution, compilation and forecasts), marketing of agricultural products (publicity and search for markets) and technical assistance to the food industry (industrial development and business organization). Apart from its marketing role the Branch includes those services and divisions responsible for control of dairy and meat products, supervision of warranties, prevention and elimination of fraud through quality control and the chemical foods laboratory.

Ontario. The Ontario Ministry of Agriculture and Food conducts a variety of programs to develop a sound agricultural industry and to help farmers. Most assistance is given through self-help programs which benefit the individual farmer. The Ministry administers 48 separate legislative Acts, some of which are regulatory, on an industry-wide basis. The Ministry has 54 county and district offices located throughout the province.

Under the Federal-Provincial Rural Development Agreement, 1970-75, the province shares equally with the Government of Canada the cost of certain rural development programs. In Ontario, ARDA is committed to programs of farm enlargement and adjustment, rural resource development and assistance to rural industries to increase employment opportunities for rural people.

Agricultural Manpower Services assists in recruiting and referring full-time farm workers. Also, assistance is provided to growers in operating a seasonal labour program in co-operation with the Canada Department of Manpower and Immigration.

The Co-operative Loans Board makes loans to agricultural co-operative associations for the construction of cold storages, feed mills, processing plants, grain elevators, potato storages, dairies, creameries and cheese factories.

The Soils and Crops Branch conducts programs of applied research to provide farmers with specific recommendations for their areas. Soil and crop specialists frequently work with

local branches of the Ontario Soil and Crop Improvement Association to relay this information to the farmers. Specialists also supervise county inspectors who enforce the Weed Control Act and provide specialized advice to producers of horticultural crops in Ontario.

The programs of the Veterinary Services Branch fall into the categories of service and regulation and are administered by three sections: the laboratory section, through six veterinary services laboratories, provides diagnostic, investigational, consultation and extension services to veterinarians and livestock and poultry producers, and also administers the Fur Farms Act; the meat inspection section administers the Meat Inspection Act which provides for meat inspection in slaughtering plants in Ontario that are not under federal inspection; and the regulatory and communicable diseases section administers the following Acts, policies and programs concerned with disease control, animal care, sale of livestock medicines, and animal health extension: the Brucellosis Act, the Pregnant Mare Urine Farms Act, the Riding Horse Establishments Act, the Livestock Community Sales Act, the Dead Animal Disposal Act, the Animals for Research Act, Veterinary Assistance Policy for Designated Areas, the Live Stock Medicines Act, Certified Herd Policy for Swine, Rabies Indemnification Program, Cattle and Swine Health Programs, Veterinary Extension, and Disease Reporting Programs.

The Live Stock Branch supervises numerous livestock improvement programs, and administers the Artificial Insemination of Live Stock Act, the Beef Cattle Marketing Act, the Dog Licensing and Live Stock and Poultry Protection Act, the Hunter Damage Compensation Act, the Live Stock Branding Act, the Protection of Cattle Act, the Provincial Auctioneers Act, the Warble Fly Control Act and the Live Stock and Live Stock Products Act. Livestock improvement programs include dairy herd improvement; beef cattle, sheep and swine performance testing; bull and ram premium policies; the federal-provincial sheep transportation assistance policy; and northern Ontario livestock assistance. The Branch makes grants available to regional livestock clubs that hold sales and livestock shows, and sponsors exhibits of livestock outside the province. A staff of livestock specialists is available to provide feeding and management advice to livestock producers.

The Ontario Stock Yards Board, which operates under the federal Livestock and Livestock Products Act, was established to provide a marketing service for Ontario livestock producers and to protect their bargaining power.

The Crop Insurance Commission of Ontario, a Branch of the Ministry, provides insurance against weather, insect and disease damage to winter wheat, spring grain, hay, corn (both silage and grain), soya beans, white beans, tomatoes for processing, green peas for processing, sweet corn for processing, red beets, apples, peaches, grapes, sweet and sour cherries, pears, set onions, seed onions, coloured beans, new seeding and flue-cured tobacco. The total cost of administration is paid by the Ontario government and 50% of the premium is paid by the federal government.

The Milk Commission of Ontario is an administrative tribunal to which dairy producers, processors and others may appeal. The Commission co-operates with the Ontario Milk Marketing Board and the Ontario Dairy Council in dairy policy planning and development.

The Milk Industry Branch of the Ministry of Agriculture and Food was established in 1973. It assumes responsibility for all regulative and administrative work under the Milk Act, the Oleomargarine Act, and the Edible Oil Products Act. The Branch also administers the milk quality, fluid milk, milk products, plant record audit and central milk testing programs. Included in these programs are the operation of infra-red analyzing of milk for butterfat, protein and lactose, the licensing of processors and distributors, certification of butter and cheese makers, graders and testers as well as inspection of farm premises and plants.

The Farm Products Inspection Branch promotes improved methods of disease control, grading, packaging, marketing, handling, storing and transporting Ontario farm produce. This is provided for under the Farm Products Grades and Sales Act and Regulations, the Plant Diseases Act, the Containers Act, the Abandoned Orchards Act, and the Seed Potatoes Act. Under the Ontario Farm Products Marketing Board, a branch of the Ministry of Agriculture and Food, 20 producer boards market 40 commodities with a total market value of approximately \$600 million annually.

The Ontario Food Council Branch has the broad responsibility of finding methods to better co-ordinate marketing of Ontario farm products in Ontario, other Canadian provinces and abroad. The Council includes representatives of producers, processors, wholesalers, distribu-

tors and consumers. Market development, import replacement, and expansion of food information and consumer affairs services are major areas of the Council's work. The Ontario Food Terminal, operating under the Ontario Food Terminal Act, offers farmers the services of one of the largest volume wholesale fruit and vegetable markets in Canada.

Research and education are administered by the Education and Research Division. An advisory body, the Agricultural Research Institute of Ontario, reviews current programs of research and recommends areas of research which should receive priority. The Division undertakes continuous research on crops, livestock, and farming practices. Horticultural research is co-ordinated by the Horticultural Research Institute of Ontario, which also operates under this Division.

The provincial entomologist reports on insect control programs, as provided under the Plant Diseases and Abandoned Orchards Act, to determine pest control recommendations for Ontario crops. The provincial apiarist is responsible for reporting on the bee and honey industry.

The Extension Branch has personnel in each of the 54 county and district offices. Agricultural representatives relay information about agricultural research developments directly to farmers. In addition, specialists on farm management and engineering are located strategically throughout the province. The northern Ontario assistance policies of the Ministry, which vary from year to year, are also administered by the Branch. The Branch endorses and assists the 4-H Clubs and the Junior Farmers' Association of Ontario.

The Home Economics Branch conducts an extension program for rural women's groups and for girls' 4-H homemaking clubs. Programs deal with the study of foods, nutrition, clothing, textiles, home furnishings, home crafts and home management.

The Information Branch publishes and distributes several hundred publications on agriculture and food, home gardening and homemaking. News releases, radio tapes and television film clips are used to convey information to farmers on important changes in agriculture. The film library distributes more than 2,000 films annually to the public. This Branch co-ordinates a Ministry Market Information Service which provides up-to-date commodity quotations and farm weather reports to the media and individual producers on a daily basis using radio and audio-tape facilities.

The Agricultural and Horticultural Societies Branch advises and offers financial assistance to agricultural and horticultural societies and ploughmen's associations and administers the Drainage Act and the Tile Drainage Act, 1971.

The Economics Branch does research into marketing, policy, production, land use and dairying, and works with Statistics Canada to collect and publish statistics on farm production and marketing.

Manitoba. The Department of Agriculture serves Manitoba through four Divisions: Marketing and Production; Rural Development; Regional; and Administration and Program Services. Within these divisions the following branches carry out a wide range of services.

The Animal Industry Branch develops and administers policies and programs that encourage the improvement and efficient production of all classes of livestock, including poultry. The Branch is also involved in helping to improve the quality of dairy products at the producer and processor level, by means of inspection, consultation, education and laboratory quality control. In co-operation with federal departments the Branch administers several acts that provide consumer protection and ensure a supply of high quality livestock products.

The Soils and Crops Branch encourages the development, production and improvement of cereal, forage and special crops, and horticulture and promotes proper land use through soil conservation programs; it also develops and administers policies that encourage good field crop husbandry, soil conservation, land development and weed control. The Economics Branch deals with educational and development programs in farm management and agricultural economics and carries out special studies and supervises the new farm diversification program. The Marketing Branch carries out a market development, research and analysis function aimed at establishing long-term markets for agricultural products. Market intelligence and relevant information are provided to the various branches of the Department, to producers and to agribusiness. The Veterinary Services Branch operates a diagnostic laboratory for animal diseases, administers the Veterinary Services District Act and the Veterinary Scholarship Fund Act and works in co-operation with practising veterinarians and the federal Health of Animals Branch in the control of livestock and poultry diseases.

The Technical Services Branch provides programs in agricultural engineering, entomology and beekeeping and offers technical assistance to rural residents installing modern farm water systems. The Community and Family Programs Branch carries out educational and developmental programs in home economics, 4-H and youth, agricultural manpower, community affairs, rural counselling and resource analysis; it also administers the Agricultural Extension Centre at Brandon for adult education programs. The Communications Services provides a regular flow of press, radio and television services to all mass media outlets and produces and distributes over 300,000 booklets, leaflets and circulars each year. The Regional Division is made up of five regions containing 38 district offices, each staffed with agricultural representatives; district home economists are located at 15 of these offices. The major role of this Division is the extending of educational and advisory information in agriculture, home-making and rural development to rural residents through meetings, field days, short courses and individual contact.

Saskatchewan. The Saskatchewan Department of Agriculture is composed of three main Divisions: the Production and Marketing Division, the Farm Resources Development Division and the Extension and Rural Development Division. In addition the Department includes Support Services, a Planning and Research Secretariat and a Grain Handling and Transportation Systems Rationalization Office.

The Production and Marketing Division administers 27 Acts and Regulations designed to improve production, handling, processing and marketing of specific agricultural commodities for the benefit of producers and consumers. It includes the following branches: Plant Industry, Animal Industry, Veterinary Services, Agricultural Engineering Services, and Marketing and Economics; and the following agencies: the Milk Control Board, Saskatchewan Crop Insurance Corporation, Saskatchewan Hog Marketing Commission, Saskatchewan Sheep and Wool Marketing Commission.

The Extension and Rural Development Division is responsible for development and performances of farm units. It co-ordinates the activities of all department personnel who deal regularly with the public. The Division consists of the Regional Extension Services Branch and the Family Farm Improvement Branch. The Regional Extension Services Branch offers guidance in agricultural adjustment programs. Its work is carried out by 43 agricultural representatives stationed throughout the province and organized into six regional extension districts, each with a supporting staff of specialists. The Family Farm Improvement Branch gives farmers technical advice on farm buildings, farmstead planning, water supplies, waste disposal, mechanization and materials handling.

The FarmStart Corporation is included in the Extension and Rural Development Division. The corporation administers a credit and grant program for persons establishing or expanding livestock production as a means of developing profitable farming operations.

The Farm Resources Development Division is primarily responsible for the development of land and water resources for agricultural use. It consists of the Lands Branch and the Conservation and Land Improvement Branch. The Division is also responsible for construction work for the Saskatchewan River Irrigation Project and for some development work for community pastures. The Lands Branch encourages consolidation of farm and ranch units where necessary to produce profitable operations; assists with transferring of units from one generation to the next; and promotes greater stability in Saskatchewan agriculture and rural communities. It also administers the limited land owned by the province, 54 provincially operated cattle pastures and five sheep pastures.

The Saskatchewan Land Bank Commission and the Agricultural Implements Board are included in the Land Resource Development Division. The Saskatchewan Land Bank Commission provides farmers not wishing to commit themselves to an investment in land with an alternative. It also provides Saskatchewan land-owners with a continuing sales opportunity for their land, enables new farmers to commence farming independent of substantial family assistance and permits farmers with insufficient land to add to their land without raising large sums of money for capital investment. Major activities of the Agricultural Implements Board include registration of implement distributors, licensing and inspection of retail vendors, and investigating complaints regarding warranties, repair parts availability and other problems.

Alberta. The Department has seven divisions whose activities are co-ordinated by an executive committee made up of the seven division directors, the Deputy Minister, three Assistant

Deputy Ministers and the Director of Administration. In addition, the Policy Formulation and Liaison Secretariat, through consultation with agribusiness, farm organizations, researchers, etc., advises the Department on requirements for future planning and policy.

The Marketing Division develops programs and policies that support all sectors of the marketing chain for Alberta's agricultural products. Within this Division there are four "action oriented" sections: the market development section emphasizes both export and domestic market expansion, and provides market information; the product development section encourages and supports the development of new foods manufactured from Alberta farm products; the commodities section works with producer commodity groups concerned with marketing; and the nutrition and food marketing section provides consumer education programs primarily in the urban areas. A fifth section, known as market intelligence, supports the other four sections by providing statistical and analytical data on all segments of the Alberta food industry.

Two developmental divisions of the Alberta Department of Agriculture are responsible for policies and programs that will ensure the survival of the family farm and promote the interests of rural communities. The Extension Division co-ordinates the extension programs of every division of the Department. In association with other extension agencies, it leads in formulating and implementing district and regional programs for agriculture, family living and community development. It operates mainly through 57 district extension offices co-ordinated by six regional directors, complemented by an expanding staff of regional specialists in livestock, plant industry, engineering and home economics; leadership training is also provided. Within the Family Farm Division are several branches dealing with land management, engineering and home design, co-operative activities and credit unions, municipal relations and surface rights, as well as the Alberta Agricultural Development Corporation which guarantees or makes loans for the development of agricultural enterprises.

The Plant Industry Division administers programs and policies relating to crop improvement, crop protection and pest control, weeds, soils and fertilizers, horticulture, apiculture and special projects. It operates a crop clinic in Edmonton, a horticultural research centre at Brooks, and an extensive tree nursery at Oliver which supplies millions of trees yearly for farm planting and reforestation.

The Animal Industry Division administers legislation, policies and programs in the broad area of livestock, dairy and poultry production and in processing and marketing. Included are: setting standards for and approving public sales of sires, record of performance programs for standards and qualifications for the artificial insemination (AI) industry; supervising feeder associations; brand registration and inspection; licensing of butchers, livestock dealers, stockyard and AI technicians; pound districts and sale of horned cattle. The testing, grading and purchasing of raw produce by all dairy plants are under regulation, as are standards of construction, manufacture, processing, sanitation and temperature control for dairy and frozen-food plants. A regular cow-testing service to provide the basis for breeding, feeding and culling dairy cattle is available to dairy producers, and chemical and bacteriological analyses are conducted for industrial directives. Licences are issued to poultry hatcheries, wholesalers, first receivers and truckers, and programs are conducted for control of pullorum-typhoid diseases of chicken- and turkey-hatching egg supply flocks. Extension programs, cost studies, disease tests and surveys, and research projects with respect to poultry, are also carried out.

The Veterinary Services Division provides diagnoses of livestock and poultry diseases and conducts investigations of disease conditions; provides lecture service for the University of Alberta and for other groups; promotes policies aimed at reducing losses such as vibriosis and mastitis control, stockyard inspection and swine health programs; administers regulations concerning live fur-bearing animals and pelts; and assists fur farmers in care, management and stock improvement.

The Irrigation Division provides professional and technical assistance to farmers in irrigation districts to encourage and ensure the economic viability of irrigated farm units by better conservation and management of the land, water, labour and capital resources available; its functions also include recommending policies and implementation of programs related to over-all irrigation system improvement.

British Columbia. The Department of Agriculture comprises four Divisions: Administration, Production and Marketing, Special Services and General Services. The Production and

Marketing Division embraces the Markets and Statistics, Poultry, Field Crops, Horticulture, Apiculture, Farm Business Management, Extension and Livestock Branches. Special Services includes the Engineering, Soils, Entomology, Plant Pathology, Veterinary, Dairy and Youth Development Branches. The remaining Branches — Information Services, Institutional Farms, Agricultural and Rural Development Act (ARDA), Agricultural Education, Agricultural Credit and Property Management — are grouped under General Services Division. The British Columbia Milk Board and the Executive Officer report directly to the Deputy Minister.

In addition to the headquarters staff at Victoria, the Department maintains 19 district offices in various parts of the province, a veterinary laboratory and poultry-testing station at Abbotsford, a beef-testing station at Kamloops and dairy and entomology laboratories at Vancouver and Cloverdale respectively; soil-testing facilities are installed at Kelowna.

11.3.2 Agricultural schools

All of the provinces of central and western Canada have agricultural colleges associated with universities giving courses leading to degrees in agricultural science and home economics and also providing postgraduate courses; the University of British Columbia has a faculty of Agricultural Sciences; Ontario, Quebec and Saskatchewan have veterinary colleges. In addition, all of these provinces have schools of agriculture or diploma courses offering basic training to young people intending to return to farms or interested in employment in businesses allied with agriculture.

In Quebec, scientific education in agriculture is available at Université Laval and McGill University, and two school boards offer technical and technological courses in agriculture. Vocational education generally is the responsibility of the Department of Education.

The Education and Research Division of the Ontario Ministry of Agriculture and Food offers five diploma-course programs at the Ontario Agricultural College, University of Guelph, as well as at the Colleges of Agricultural Technology at Centralia, Kemptville, New Liskeard and Ridgeway.

In the Atlantic Provinces, agricultural education is centred in the Nova Scotia Agricultural College at Truro, NS. This College provides the first two years of a BSc program in Agricultural Science (three years in Agricultural Engineering) with the final two years provided by other faculties in eastern Canada. In addition, the College offers several technical programs associated with farming and agribusiness and a variety of vocational courses designed to update farmers and other industry personnel.

11.4 Yearly statistics of agriculture

The collection, compilation and publication of statistics relating to agriculture is the responsibility of Statistics Canada. Valuable information is obtained through the censuses, through partial-coverage mailed questionnaire surveys and from the administrative records of government operations.

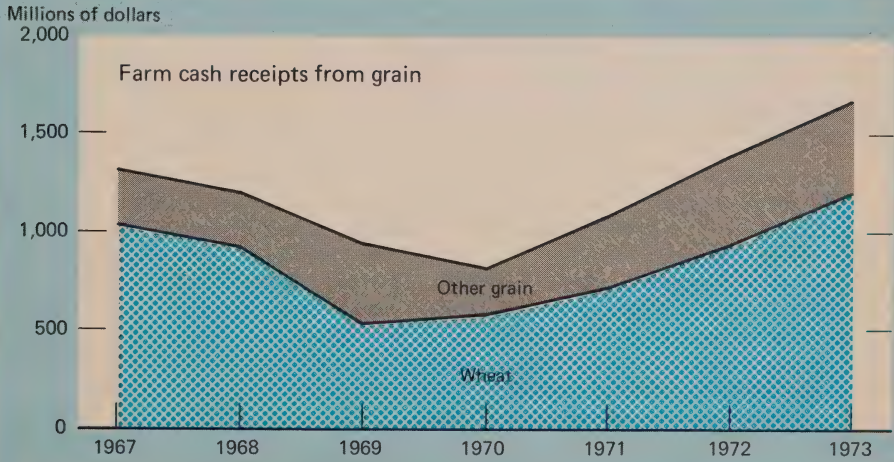
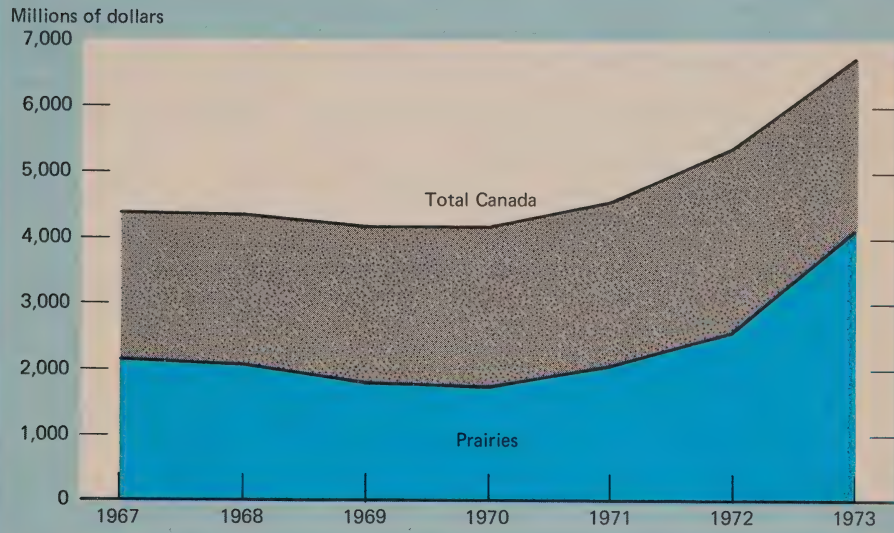
Statistics Canada collects and publishes primary and secondary statistics of agriculture on an annual and monthly basis. The primary statistics relate mainly to the reporting of crop conditions, crop and livestock estimates, wages of farm labour and prices received by farmers for their products. The secondary statistics relate to farm income and expenditure, per capita food consumption, marketing of grain and livestock, dairying, milling and sugar industries and cold storage holdings. In the collection of annual and monthly statistics, the Canada Department of Agriculture and various provincial departments, as well as such agencies as the Canadian Grain Commission and the Canadian Wheat Board, contribute statistical data and aid directly in Statistics Canada survey work. Many thousands of farmers throughout Canada send in reports voluntarily and dealers and processors also provide much valuable data. The figures contained in this Section do not include estimates for Newfoundland; agriculture plays a relatively minor part in Newfoundland's economy and commercial production of most agricultural products is quite small. In the following Subsections details are given for 1972 with earlier comparisons; figures for the latest year are subject to revision and it should be noted that many of those given for earlier years have been revised since the publication of the *1973 Canada Year Book*.

11.4.1 Farm income

Cash receipts from farming operations. Estimates of cash receipts from farming operations include data concerning cash receipts from the sale of farm products, Canadian Wheat Board participation payments on previous years' grain crops, cash advances on farm-stored grains in western Canada, deficiency payments made by the Agricultural Stabilization Board and supplementary payments. Farm cash receipts from the sale of farm products include the returns from all sales of agricultural products except those associated with direct inter-farm transfers. The prices used to value all products sold are prices to farmers at the farm level; they include any subsidies, bonuses and premiums that can be attributed to specific products but do not include storage, transportation, processing and handling charges which are not actually received by farmers.

Total cash receipts from farming operations for 1973, excluding supplementary payments, are now estimated at \$6,729 million for Canada, 25% above the revised value of \$5,386 million in 1972 (Table 11.1). This gain can be attributed to increases in all cash receipt items

Total farm cash receipts, 1967-73



except tobacco and deficiency payments. The most notable increases occurred in Canadian Wheat Board payments for wheat and barley, as well as receipts for rapeseed, potatoes, cattle and calves, hogs and poultry (Table 11.2). Rising prices in both the crops and livestock sectors in all regions of Canada resulted in increased total cash receipts in all provinces.

Farmers also received supplementary payments amounting to \$72 million during 1973, down slightly from the \$77 million received during 1972. These payments included those made under the provisions of the Prairie Farm Assistance Act, the Lower Inventory for Tomorrow (LIFT) program, the two-price wheat program, cash grants paid to farmers in Quebec and Ontario under the rain damage program and to farmers in Alberta and British Columbia under the Western Emergency Assistance program. Total cash receipts from farming operations and supplementary payments in 1973 amounted to \$6,801 million, 25% above the estimate of \$5,463 million recorded in 1972.

Farm net income. Two different estimates of farm net income from farming operations are prepared by Statistics Canada. Realized net income is obtained by adding together farm cash receipts from farming operations, supplementary payments and the value of income in kind, and deducting farm operating expenses and depreciation charges. This estimate of farm net income therefore represents the amount of income from farming that operators have left for family living, personal taxes and investment. The second estimate is referred to as total net income and is obtained by adjusting realized net income to take into account changes occurring in inventories of livestock and stocks of field crops on farms between the beginning and end of the year. This estimate is used in calculating the contribution of agriculture to the "income" component of the system of national accounts and for making comparisons with net income of non-farm business enterprises (Table 11.3).

It is estimated that in Canada (excluding Newfoundland), realized net income of farm operators from farming operations amounted to \$2,706.4 million in 1973, a 26.4% increase over the revised 1972 amount of \$2,141.8 million.

Contributing to this increase in realized net income was an estimated 24.2% expansion in realized gross income to \$7,478.2 million in 1973 from the 1972 revised figure of \$6,022.5 million. All components of gross income contributed to the increase with the largest, cash receipts from the sale of agricultural products, rising by 24.9% in 1973.

Farm operators incurred operating expenses and depreciation charges totalling an estimated \$4,771.8 million, 23.0% above the revised 1972 value of \$3,880.7 million. Although expenditures on most farm input items were substantially above the 1972 levels, the leading contributors to the increase in expenses were gross farm rent, feed, fertilizer and other crop expenses.

Total farm net income from farming operations (realized net income adjusted for inventory changes) is estimated at \$3,343.9 million for 1973. The value of inventory change on farms which contributed to this level of total net income is plus \$637.6 million, compared to minus \$295.3 million in 1972. This expansion in inventories was due partly to an increase in the number of cattle on farms. The value of inventory change for 1973 also includes an amount equal to \$305 million to counter-balance deferred payments which are removed from cash receipts. ("Deferred payments" refers to the value of farmers' deliveries in the Prairie Provinces of grain in 1973 for which payments were deferred until 1974.)

11.4.2 Field crops

Canada's 1973 wheat crop, estimated at 628.7 million bu, was 17.9% above the 1972 crop of 533.3 million bu and 18.7% above the 1971 crop of 529.6 million bu. The average yield per acre at 25.4 bu was 1.6% more than the 1972 yield of 25.0 bu and 7.0% less than the 1971 yield of 27.3 bu. The average protein content of the 1973 crop of hard spring wheat was 13.3%, higher than the 1972 level of 13.0% and lower than the 1971 level of 13.5%.

Acreages, yields and prices of the principal field crops for the years 1969-73, with averages for 1964-68 are shown in Table 11.4; acreages and production of field crops by province for 1972 and 1973 in Table 11.5 and acreages and production of grain in the Prairie Provinces for the years 1969-73 in Table 11.6. Table 11.7 shows the stocks of Canadian grain on hand in Canada and in the United States on July 31 for the years 1970-72 with averages for the 10-year period 1960-69.

11.4.3 Livestock and poultry

The total number of cattle and calves in Canada, excluding Newfoundland, at June 1, 1973 was estimated at 14.1 million head, compared to 13.7 million head at June 1, 1972, a record for this time of year. (The 1971 Census counted 7,138 cattle in Newfoundland.) Milk cows (two years and over) were estimated at 2.2 million head, down 3% from June 1, 1972, continuing the trend toward reduced dairy herds that began about 20 years ago. Total numbers of cattle in Canada have been increasing since 1958, reflecting the growing importance of beef production. Cattle slaughtered in federally inspected packing plants in 1973 amounted to 2.9 million head, unchanged from 1972. Calf slaughter, at 291,524, decreased by 28% from 1972, again underlining the trend toward beef production as more calves are fed out and veal production consequently declines (Table 11.8).

Exports of cattle and calves in 1973 were 426,350, up from 299,625 in 1972. Imports, at 229,505 head (228,221 from the United States), were up by 213%. Beef exports (cold dressed carcass weight equivalent) increased slightly from 164 million lb. in 1972 to 167 million lb. in 1973. Beef imports, however, decreased from 215 million lb. in 1972 to 208 million lb. in 1973.

Agriculture Canada reported that the weighted average price of A1 and A2 steers at Toronto for 1973 was \$46.56 compared to \$37.20 in 1972 and \$32.66 for the 1969-73 average.

The June 1, 1973 estimate for the total number of pigs in Canada was just over 7.0 million, a slight increase over the previous year. (The 1971 Census estimates the number of pigs in Newfoundland at 14,639.) Pigs slaughtered in federally inspected plants in 1973 numbered 9.0 million compared to 9.4 million in 1972 as reported by Agriculture Canada, a decrease of 3.3%. The weighted average price at Toronto (dollars per cwt for index 100 pigs, dressed) in 1973 was \$54.66, compared to \$37.40 in 1972 and \$32.38 for the 1969-73 average.

The number of sheep and lambs on farms at June 1, 1973 was estimated at 832,500, a decrease of 1% from 845,000 at June 1, 1972. (Newfoundland figures for 1971 were 9,384 sheep.) Sheep and lambs slaughtered in federally inspected packing plants in 1973 totalled 234,206, up 9.1% from 1972. Imports of live animals also increased from 44,016 in 1972 to 61,083 in 1973 due to higher imports from the United States. Imports of mutton and lamb, on the other hand, decreased from 81.5 million lb. in 1972 to 59.3 million lb. in 1973.

The estimated number of laying hens on farms at June 1, 1973 was 25.1 million compared to 25.9 million at June 1, 1972 a decrease of 3.1%. Production and consumption of poultry meat are shown in Table 11.9.

11.4.4 Dairying

The number of dairy cattle on farms has been declining gradually for many years. Despite the over-all decrease in numbers, total milk production in Canada had remained fairly constant by an increase in output per cow until 1971 when it declined 556 million lb. from the previous year (Table 11.10). In 1972 production increased slightly to 17,676 million lb. and dropped again in 1973 to 16,886 million lb. Production is concentrated in central Canada; Quebec and Ontario account for about 73% of the total quantity.

Table 11.11 shows that the farm value of milk production in Canada for 1973 was \$911.5 million, an increase of approximately 9.4% over 1972. The value of milk used in factories in 1973 was \$446.9 million (49% of total production) and fluid milk sales amounted to \$410.8 million (45% of total production).

Production of creamery butter, which in 1973 amounted to 252.3 million lb. and required 35% of the total national milk output, represents a decline of 13.2% from the 1972 figure (Table 11.12). Quebec accounted for almost half of the total output, followed by Ontario with 29%. Per capita consumption, shown in Table 11.13, was 13.3 lb., slightly lower than in 1972.

The total production of factory cheese (Table 11.12) for 1973 was 248.3 million lb. compared with 249.5 million lb. for 1972, and per capita consumption (Table 11.13) of all varieties of cheese, excluding cottage cheese, was 14.4 lb. compared with 13.2 lb. for 1972. Ontario accounted for 41% of the output and Quebec 48%.

Total production of concentrated whole milk products, which includes condensed milk, evaporated milk, whole milk powder, partly skimmed evaporated milk and others, decreased 1.1% from the previous year. Total production of concentrated milk by-products, which include condensed skim milk, evaporated skim milk, skim milk powder, buttermilk powder, whey powder, casein and others, decreased 7.9% from 1972.

11.4.5 Horticultural crops

Fruits and vegetables. The fruit and vegetable industry is an important part of the agricultural and food distribution sectors of the economy. Fresh and processed fruits and vegetables account for more than one third of the quantity of all food consumed in Canada. There are over 25 fruit and vegetable crops (potatoes excluded) grown commercially in Canada with an annual farm value of over \$200 million.

The most important fruit grown in Canada is still the apple. Commercial apple orchards are found in Nova Scotia, New Brunswick, southern Quebec, much of Ontario, and the interior of British Columbia, particularly in the Okanagan Valley. Tender tree fruits — pears, peaches, cherries, plums — are also grown in Ontario, with the most important concentrations in the Niagara Peninsula and in Essex County. These fruits, as well as apricots, are also grown on a large scale in the southern part of the Okanagan Valley in British Columbia.

Strawberries and raspberries are cultivated commercially in the Maritimes, Quebec, Ontario, and British Columbia. British Columbia fruit growers also produce loganberries commercially in the lower mainland and on Vancouver Island. Grapes also are grown in the Niagara district of Ontario and on a smaller scale in British Columbia. The native blueberry is found wild over large areas in Canada and is harvested in commercial quantities in the Atlantic Provinces, Quebec, and Ontario. A cultivated crop is grown in British Columbia. Table 11.14 shows the estimated commercial production and farm value of fruit grown in 1971-73. The production of field-grown vegetables in Canada is seasonal. During the winter when no domestic vegetables are being harvested, except in greenhouses, supplies of most fresh vegetables are imported duty free from the United States. During the growing season a large percentage of the domestic requirements are met from Canadian crops. Some vegetables are exported from Canada, particularly to a few large centres of population in the United States close to the border. Potatoes are the most important vegetable produced in Canada. Production slightly exceeds consumption and normally about 5% is exported. Table 11.15 presents the estimated commercial acreage and production of vegetables in 1970-72 with average for 1965-69.

The processing industry plays an important part in the marketing of Canadian-grown fruits and vegetables. Over the years factories have been built in most of the important growing regions and considerable proportions of fruit and vegetable crops are canned, frozen or otherwise processed each season, especially asparagus, beans, peas, corn and tomatoes. In recent years the importance of freezing has been increasing. Almost all vegetables for processing are grown under a system whereby the processor contracts annually with each grower for certain acreages.

The processing of canned tender tree fruits has declined considerably and imports have increased rapidly. Over the past 25 years the tonnage and value of exported vegetables has varied considerably but there is a slight upward trend. However, in the same period vegetable imports have doubled.

In recent years the supply of fruits available for consumption in Canada has remained relatively unchanged while vegetables have experienced a decline. The per capita domestic consumption of all fruits for 1972 of 247.1 lb. (fresh equivalent weight) was almost identical to the five-year (1966-70) average of 247.0 lb. Of this total, 109.3 lb. per capita were fresh, 51.8 lb. were canned, 33.0 lb. were frozen and 60.3 lb. were made into juice. Per capita consumption of vegetables, excluding potatoes, was 109.0 lb. for the same period and this was 6.0% lower than the five-year average of 116.0 lb. Each individual consumed an average 64.2 lb. of fresh vegetables, 25.2 lb. of canned vegetables and 9.7 lb. of frozen vegetables in 1972 (fresh equivalent weight). This means that there were 519.3 lb. of fruits and vegetables, including potatoes, available per capita for consumption in Canada in 1972.

Honey. As shown in Table 11.16, honey production in 1973 was above that of 1972. Honey is produced commercially in all provinces except Newfoundland and yields vary to some extent from year to year. Alberta is consistently the largest producer, accounting for almost 40% of the total output in 1973. Honey bees are kept in some fruit-growing districts for pollination purposes and are also used for pollination of certain seed crops. To facilitate storage, shipment and uniformity of quality, large quantities of Canadian honey are pasteurized. Beekeepers' marketing co-operatives are active in several provinces. In 1973 Canada exported 21.7 million lb. of honey valued at \$7.7 million, slightly more than twice the quantity exported in 1972. Ex-

ports went mainly to the United Kingdom, the United States, Belgium, Luxembourg, Japan and the Netherlands.

Sugar beets and beet sugar. Sugar beets are grown commercially in Quebec, Manitoba and Alberta and beet sugar factories are located in these provinces. In Quebec, commercial production is centred in the St-Hilaire area of the Eastern Townships; Alberta, where sugar beets are grown under irrigation, produces the largest crop. Acreage, yield and value of sugar beets for the years 1969-73 are shown in Table 11.17, together with quantity and value of shipments of beet sugar.

Maple sugar and maple syrup. Maple syrup is produced commercially in Nova Scotia, New Brunswick, Quebec and Ontario. The bulk of the crop comes from the Eastern Townships of Quebec, a district famous in both Canada and the United States as the centre of the maple products industry. Virtually all of the maple products exported go to the United States with the larger proportion moving as sugar, although substantial quantities of syrup are also shipped. Much of the syrup sold in Canada is marketed in one-gallon cans direct to the consumer from the producer, but a considerable amount of both sugar and syrup is sold each year to processing firms. Production and value of maple sugar and maple syrup, by province, are shown in Table 11.18.

Greenhouse operations. The total area operated under glass and plastic in 1971 and 1972 amounted to 32.1 million sq ft and 35.6 million sq ft, respectively, while the total value of growers' sales stood at \$64.6 million in 1971 and \$74.1 million in 1972.

Nursery industry. In 1972 the nursery trades industry had a total revenue of \$55 million. Approximately 44% of this represents grower sales of traditional fruit and nursery stock and 34% was earned by supplying the increasing demand for contracted services.

Eggs. Table 11.19 shows production and value of farm eggs by province. Egg production totalled 461.7 million dozen in 1973, 1.4% less than the 468.4 million dozen produced in 1972. The number of layers decreased in 1973 over 1972. The rate of lay per 100 layers rose to 21,515 from 21,016 and the farm selling price of eggs averaged 55.3 cents a dozen compared with 37.1 cents a dozen in 1972. The Atlantic Provinces produced 8.2% of all eggs in 1973, Quebec 12.9%, Ontario 41.3%, the Prairie Provinces 25.3% and British Columbia 12.3%.

Wool. Estimates of production of shorn wool in 1973 at 3.2 million lb. were 7% lower than 1972. Average farm price per lb. (excluding a six-cent Patronage Dividend declared for 1972) was 31.4 cents for 1972 compared to 16.3 cents in 1971.

Tobacco. The total acreages planted in 1973 as compared to 1972 declined in Quebec, but increased fractionally in the Maritime Provinces and substantially in Ontario. The yields per acre were higher in Quebec and Ontario and declined in the Maritime Provinces. Total production, however, increased from 186.8 million lb. in 1972 to 257.3 million lb. in 1973. The average value per lb. advanced from 76.5 cents in 1972 to 78.8 cents in 1973 (Tables 11.20 and 11.21).

No information is available on the production of cigarettes for domestic consumption but, on the basis of domestic sales reported to Statistics Canada by manufacturers, the number of cigarettes sold rose from 50,864.4 million in 1971 to 53,292.5 million in 1972 and to 54,864.3 million in 1973.

11.4.6 Prices of agricultural products

The index of farm prices of agricultural products (Table 11.22) was designed to measure changes occurring in the average prices farmers receive at the farm from the sale of farm products. In comparing current index numbers with those prior to August 1973, the following points should be considered. Prices of all western grains used in the construction of the index prior to that date are final prices; all later figures are adjusted initial prices only for wheat, oats and barley. Any subsequent participation payments will be added to the prices currently used and the index revised upward accordingly. Average cash prices per bu of major Canadian grains are given in Table 11.23 and yearly average prices a cwt of Canadian livestock in Table 11.24.

11.4.7 Food consumption

The food consumption figures represent available domestic supplies of food which include production, stocks on hand at the beginning of the year, imports less exports, and stocks

on hand at close of the period, as well as marketing losses and industrial uses. All calculations are made at the retail level of distribution, except for meats for which the figures are worked out at the wholesale stage. The amount of food actually eaten would be somewhat lower than indicated because of losses and waste occurring after the products reach the consumer.

All basic foods are classified under 14 main commodity groups. The total for each group is computed using a common denominator, for example: milk solids (dry weight) for the dairy products group; fat content for fats and oils; and fresh equivalent for fruits. Most foods are included in their basic form, that is, as flour, fat, sugar, etc., rather than in more highly manufactured forms.

The series in Table 11.25 represents the official estimates of yearly supplies of food moving into consumption, expressed in lb. per capita, for the years 1966-70 as an average for comparison with the years 1971 and 1972. Production of meats from slaughter in Canada, total supply, distribution and per capita disappearance of meats and lard are shown in Table 11.26. All estimates are on a cold carcass-weight basis except canned meats, which are in terms of product.

11.5 1971 Census of Agriculture

This Section presents a limited amount of information from the 1971 Census of Agriculture; details are contained in Volume IV — Parts 1, 2 and 3 of the 1971 Census of Canada. A list of the special and advance census reports that have been released is available on request.

Number of census-farms. For both census years, 1971 and 1966, a census-farm was defined as a holding of one acre or more with sales of agricultural products valued at \$50 or more during the 12 months prior to the census. The number of census-farms in Canada declined 15% to 366,128 in 1971 from 430,522 in 1966, indicating an acceleration of the trend since 1941 toward an ever-decreasing number of census-farms (Table 11.27).

Farm areas. The total area of census-farms in 1971 was 169,668,614 acres, a 2.6% decrease from the 174,124,828 acres recorded in 1966 (Table 11.28). The Maritime Provinces, Quebec and Ontario all reported significant decreases in farm acreage. Only Newfoundland, Alberta and British Columbia showed an increase, the increase in Newfoundland being due to the establishment of new community pastures. The Yukon Territory and the Northwest Territories recorded a slight increase in acreage. For Canada as a whole, the 108,148,877 acres of improved land for 1971 was virtually unchanged from the area recorded in 1966. A 4.3% increase in summerfallow to 26,740,727 acres from 25,631,683 acres in 1966 nearly offset small decreases in cropland, improved pasture and other improved land. The area of unimproved land decreased 6.8% to 61,519,737 acres in 1971 from 65,970,451 acres in 1966. Woodland, decreasing by 18.8%, accounted for the majority of this loss, while other improved land decreased 3.4%.

Economic classification of census-farms. Census-farms were divided into 12 economic classes according to the total value of products sold during the past calendar year (Table 11.29). Such a classification serves as a measure of the productive size of census-farms in Canada. The former division of census-farms into "commercial" and "small-scale" farms has been dropped, since what may be felt to be a commercial farm in one region might be considered small-scale in another. The group classified as "institutional farms, etc." includes experimental farms, community pastures and institutional-type farms regardless of the amount of sales of agricultural products.

Type of farm. Table 11.30 shows that, with the exception of farms classified as "institutional farms, etc.", all census-farms with sales of \$2,500 or more were classified as one of 10 major product types. A criterion of 51% or more of total sales was used for this classification. For example, a census-farm was typed as a poultry farm if 51% or more of the total agricultural sales for the farm was obtained from the sale of poultry products. However, it was classed as a dairy-type farm if 40% to 50% of total sales was obtained from dairy products, provided the sale of dairy products together with the sale of cattle and calves amounted to 51% or more of the total sales. Under these criteria, it was possible for a farm to qualify for more than one product type. To prevent this possibility, the 10 product types were given a priority rating in the order listed in Table 11.30.

Size of census-farms. In 1971, 49% of the census-farms in Canada contained less than 240 acres compared with 53% in 1966 (Table 11.32). This decrease in the number of small holdings again indicates the trend toward consolidation of farms into larger holdings. However, the wide variation in the distribution of farms by size between provinces continues. In the Atlantic Provinces 71.8% of the census-farms were under 240 acres in size; in Quebec and Ontario 78.4% were under 240 acres; in the Prairie Provinces only 17.9% fell below 240 acres; and in British Columbia the percentage was 78.5 (Table 11.31).

Age of census-farm operators. The proportion of census-farm operators under 35 remained at approximately 15% of the total. Similarly, the number of operators in the middle age groups, 35-54, remained at 52% and those in the older age groups, 55 and over, remained at 33% (Table 11.32).

Farm machinery. Table 11.33 indicates that between 1966 and 1971 farm trucks increased by 7.3%, swathers 12.6%, pick-up hay balers 11.6% and forage crop harvesters 17.3%. Decreases were reported for automobiles, 8.9%, tractors, 0.3% and combines, 4.4%.

11.6 International crop statistics

Tables 11.34 and 11.35 are based on estimates published by the Foreign Agricultural Service, US Department of Agriculture, and give the acreages and production of wheat and the production of oats and barley for the harvests of 1972 and 1973 with averages for the years 1967-71, in the leading grain-producing countries of the world.

11.7 The marketing of agricultural products

11.7.1 The grain trade

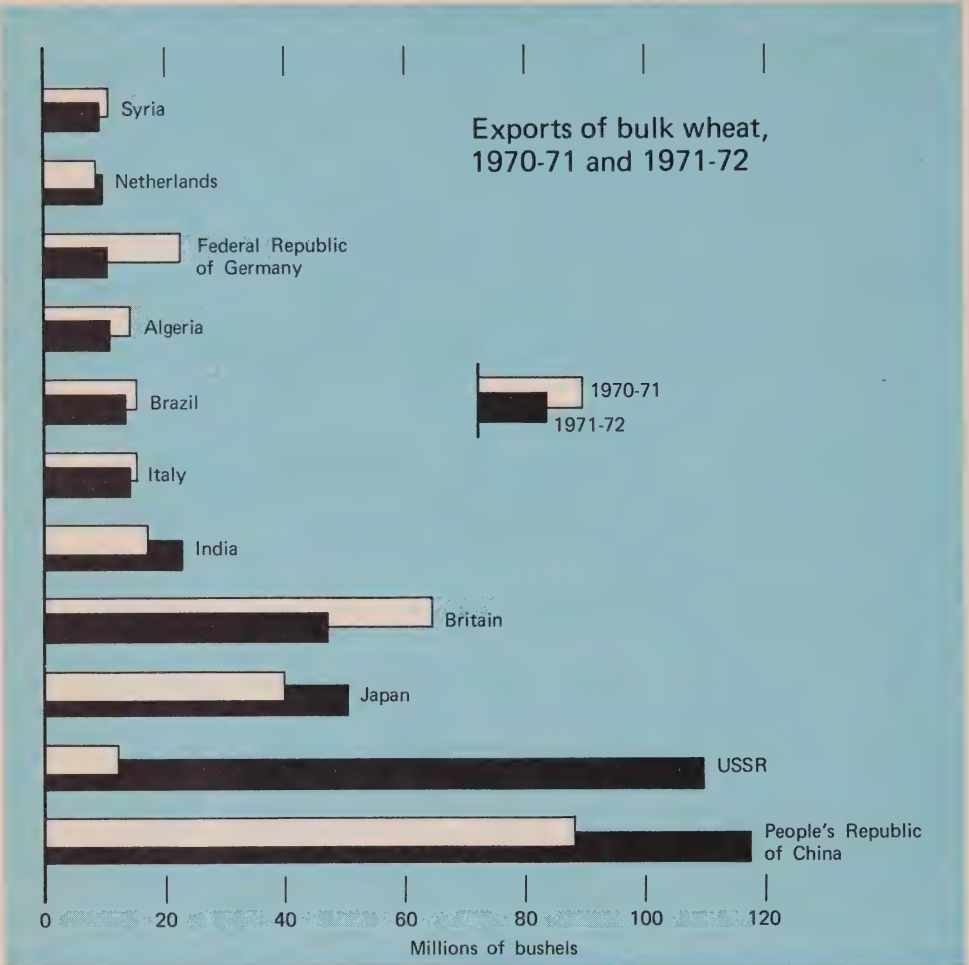
Further modifications were made in delivery quota policies for the 1971-72 crop year. However, the general framework of the quota system introduced the previous crop year remained unchanged. The modifications to the system were designed to give producers greater flexibility and to make their deliveries more responsive to market requirements. The Wheat Board continued to authorize quotas for specific grains, and, if necessary, grades of grain during the 1971-72 crop year. Producers were again able to select one alternate delivery point and delivery quotas were again based on the acreages assigned by producers to the delivery of particular grains. For additional details regarding delivery quota policies see Statistics Canada publication *Grain trade of Canada* (Catalogue No. 22-201). Supply and disposition of Canadian grain for the crop years ending July 31, 1971 and July 31, 1972 are shown in Table 11.36.

11.7.1.1 The 1971-72 crop year

Estimated domestic supplies of wheat, oats, barley, rye, flaxseed and rapeseed totalled 2,687 million bu in the crop year 1971-72, an increase of 3% over the 1970-71 total of 2,616 million bu. Marketings of these grains in the Prairie Provinces amounted to 952.2 million bu, 21% over the 1970-71 level of 785.3 million bu and 46% more than the 10-year (1960-61-1969-70) average of 652.1 million bu. Marketings of wheat during the 1971-72 crop year, at 517.5 million bu, were up 35% and accounted for 54% of total deliveries. Marketings of the other major grains (totals for 1970-71 and 10-year averages, respectively, in parentheses) in millions of bushels were: oats, 32.3 (58.3, 42.9); barley, 295.5 (235.9, 93.9); rye, 15.5 (11.6, 7.5); flaxseed, 21.6 (33.7, 16.7); and rapeseed 69.8 (61.5, 14.7).

Wheat. Domestic supplies of wheat in 1971-72 amounted to 1,263.7 million bu, 6% below the 1970-71 total of 1,340.3 million bu. The 1971 production of wheat was 529.6 million bu in contrast to 331.6 million bu in 1970, and carryover stocks were 734.2 million bu compared with 1,008.7 million bu the previous year. Exports of wheat and flour in terms of wheat during the 1971-72 crop year, at 503.8 million bu, were 16% above the 435.3 million bu exported in 1970-71, 56% higher than the long-term average of 322.6 million bu and 22% more than the 10-year average of 412.5 million bu.

During the crop year 1971-72, marketing of western Canadian wheat was again conducted by the Canadian Wheat Board on a one-year Pool basis, the initial payment being \$1.46 per bu basis No. 1 C.W. Red Spring in store Thunder Bay or Vancouver. On February 13, 1973 the Board announced that a final payment involving the distribution of \$62.6 million would be made on wheat delivered by producers during the 1971-72 crop year.



Grain exports. The 1971-72 exports of bulk wheat, at 478.1 million bu, were 68.6 million bu higher than the preceding year's total of 409.4 million bu and also above the recent 10-year average of 377.5 million. During the 1971-72 crop year the People's Republic of China purchased 111.7 million bu and remained Canada's principal wheat customer for the fourth consecutive year. With the sharp increase in sales to 109.6 million bu, the largest volume since 1965-66, the USSR became Canada's second largest wheat market. Japan purchased 50.6 million bu and remained in third place on the list of wheat importers. Reduced sales of Canadian wheat to Britain, at 47.1 million bu, dropped that country to fourth position from second in 1970-71. Other leading markets during 1971-72 with quantities in millions of bu (1970-71 figures in parentheses) were as follows: India 23.0 (17.1); Italy 14.4 (15.4); Brazil 13.6 (15.5); Algeria 10.9 (14.3); the Federal Republic of Germany 10.5 (22.7); the Netherlands 9.7 (8.8); and Syria 9.2 (10.6).

Exports of Canadian wheat flour during the 1971-72 crop year amounted to 10.7 million cwt (24.7 million bu of wheat equivalent), slightly below the 1970-71 total of 24.8 million bu. Cuba was Canada's major customer for wheat flour, taking 5.9 million cwt or 13.5 million bu of wheat equivalent and accounting for a little more than half of the crop year total. The United Arab Republic and Britain, with imports equivalent to some 1.8 million bu each, accounted for a combined 14% of the crop year total and Ceylon imported 1.5 million bu.

Combined exports of oats, seed oats, barley, rye, flaxseed and rapeseed (including customs exports of oatmeal and rolled oats, malt in terms of grain equivalent) amounted to a record 320.1 million bu during the crop year 1971-72. This figure was 19% more than the com-

parable 1970-71 level of 269.9 million bu and sharply above the 10-year (1960-61 – 1969-70) average of 84.9 million bu. Exports of Canadian oats in bulk totalled 10.2 million bu during 1971-72, a decrease of 22% from the 13.1 million bu shipped during the previous year. United States was the principal market for this grain with purchases of 3.5 million bu. Italy, at 2.7 million bu, was the largest overseas market. Other shipments went to the Netherlands (1.6 million bu), the Federal Republic of Germany (1.1 million), Switzerland (0.5 million), Britain (0.4 million), Venezuela and Ireland (0.2 million each). In addition, exports of Canadian oatmeal and rolled oats amounted to the equivalent of 25,000 bu in 1971-72 compared with 23,000 the year before.

Barley exports, at 224.3 million bu, reached an all-time high during the 1971-72 crop year, 30% over the 172.3 million bu of 1970-71. Italy remained Canada's best market for this grain with imports of 40.2 million bu, an increase of 7 million bu over the previous year. Japan was the second market with purchases of 30.8 million bu in 1971-72, a gain of 5 million bu over 1970-71. Britain was third in 1971-72 with 28.3 million bu compared with 29.5 million in 1970-71. USSR, with a purchase of 22.0 million bu, was in fourth position after making no barley purchases for the previous 14 years. Shipments to other major customers were as follows, with totals for the previous year in parentheses, in millions of bu: Poland 14.7 (4.5), Romania 13.3 (nil), United States 13.2 (8.5), the Federal Republic of Germany 11.6 (28.7), the German Democratic Republic 11.3 (nil), Israel 8.2 (4.1), Iraq 6.0 (4.4), Iran 5.0 (nil), and the Netherlands 3.2 (9.9). In addition to the exports of Canadian barley as grain, shipments of malt were the equivalent of 6.3 million bu, about 14% below the 1970-71 figure of 7.3 million bu. Exports of malt during 1971-72 were shipped to 22 different destinations, the major markets being Japan (2.4 million), United States (0.6 million), Peru and the Philippines (0.5 million each), Venezuela (0.4 million), Britain, Jamaica and Brazil (0.3 million each).

Exports of Canadian rye during the 1971-72 crop year amounted to 10.8 million bu, the largest volume since 1955-56. Japan continued to be the principal market, importing 7.5 million bu in 1971-72, 57% more than the 1970-71 figure of 4.8 million bu. Other major markets importing Canadian rye were as follows: Britain, 1.2 million; the Netherlands, 0.8 million; Norway, 0.5 million; the Philippines and United States, 0.3 million each.

During 1971-72, clearances of Canadian flaxseed moving overseas amounted to a record of 25.7 million bu, 21% above the 21.2 million bu of 1970-71. The leading market for Canadian flaxseed was the Netherlands with imports amounting to 11.2 million bu followed by Japan (4.5 million), the Federal Republic of Germany (3.7 million), Britain (1.9 million), Belgium and Luxembourg and Spain (0.9 million each). Relatively small shipments of Canadian flaxseed went to 14 other destinations. Exports of linseed oil were equivalent to about 1.5 million bu of flaxseed, the bulk of which was shipped to Britain. In the 1971-72 crop year, trade in rapeseed amounted to 42.6 million bu, reflecting a 4.2 million-bu decrease from last year's record of 46.8 million. Japan continued to be Canada's major market for this oilseed with purchases of 22.3 million bu, surpassing the 1970-71 figure by 6.3 million bu. France at 7.7 million bu, the Netherlands at 4.9 million, Italy at 2.8 million, and the Federal Republic of Germany at 1.9 million were the major markets during the 1971-72 crop year.

11.7.1.2 The International Wheat Agreement, 1971

The International Wheat Agreement (IWA) 1971 came into effect on July 1, 1971 to cover the period through June 30, 1974. It consists of two legal instruments: a Wheat Trade Convention and a Food Aid Convention. The International Wheat Council, established in London, England by the International Wheat Agreement, 1949, continued in being for the purpose of administering the Wheat Trade Convention and providing service to the Food Aid Committee, the body established to administer the Food Aid Convention. The International Grains Arrangement (IGA), 1967, the events that led to the International Wheat Agreement 1971, and its provisions, were described in the 1970-71 Annual Report of the Canadian Wheat Board.

The Wheat Trade Convention. The Wheat Trade Convention, 1971 has three main features. The International Wheat Council continues as a forum for international consultation and co-operation and as an agency for the collection and dissemination of information on the world wheat situation. Secondly, it provides for continuous review of the world wheat market situation through the medium of the Advisory Sub-committee on Market Conditions. Finally, it does not contain any price revisions or related rights and obligations.

Under the 1949 and subsequent International Wheat Agreements Canada alone, of the major exporters, had a firmly established price range with No. 1 Northern being the reference wheat and Fort William/Port Arthur (Thunder Bay) being the reference port. The IGA 1967 was an attempt to strengthen pricing provisions by having firm price ranges established for the principal grades of wheat of all major trading nations. Unfortunately, the IGA minimum prices were breached by certain exporting countries even before the arrangement came into effect.

Prior to the International Wheat Conference in February 1971, the United States rejected the IGA pricing formulas as a basis for negotiating a new agreement. It was proposed that there be a return to the old IWA formula under which only Canada would have a specified price range. The latter proposition was unacceptable to Canada as it could have put the country at a competitive disadvantage in relation to the other major exporters.

The Conference was unable to reach agreement on either the establishment of reference grades or the establishment of reference points and related price equivalents. Failure to agree on these technical difficulties meant it was not possible to devise meaningful price provisions which met the objectives of market stability and equity of rights and obligations among exporters and between exporting and importing countries.

Under Article 21 there is a requirement that the Council examine at an appropriate time the questions of prices and related rights and obligations, and, when it judges these matters capable of successful negotiation with the object of bringing them into effect within the life of this Convention to request the Secretary-General of the United Nations Conference on Trade and Development to convene a negotiating conference.

In both its November 1971 and July 1972 sessions the Council considered the possibility of action under Article 21 but did not judge the issues as being capable of negotiation at either of those times. Technical difficulties remained the paramount problem. International monetary instability, insufficient trading experience in the new grades of Canadian wheat, anticipated changes resulting from the enlargement of the European Economic Community early in 1973, and lack of preparatory time were cited as other reasons. However, the Council reaffirmed its objective to implement substantive economic provisions within the life of the present Convention, and directed the Executive Committee to keep the matter under continuous review and to report on it at each session of Council.

Despite the absence of price provisions and related rights and obligations, the International Wheat Council continued operating within the framework of the IWA. During the 1971-72 crop year (July-June) 47 importing countries and 12 exporting countries plus the European Economic Community participated in the Agreement. The EEC, which regularly engages in both importing and exporting, is listed simultaneously in the Convention as an exporting country and as an importing country with all the rights and obligations pertaining thereto.

IWA member countries are involved, either as importers or exporters, in over 90% of the total world trade, commercial and non-commercial, of wheat and flour. However, only commercial sales between members are explicitly subject to the terms of the Wheat Trade Convention. Commercial sales by member exporting countries to member importing countries in 1971-72 amounted to 798 million bu. This was 41.5% of total world trade in wheat and flour. Member importing countries purchased over 95% of their import requirements from other member countries in 1971-72.

The Food Aid Convention. Eight countries plus the EEC were members of the Food Aid Convention. Over-all commitments (including in some cases cash contributions or ocean freight contributions) represented the equivalent of approximately 4.0 million tons of wheat in 1971-72. Canada's contribution was 110,200 tons (4.0 million bu) in excess of her obligation of 495,000 metric tons (18.2 million bu).

Commodities shipped under the Food Aid Convention were wheat, wheat flour, bulgur, corn, cornmeal, sorghum, rolled oats, rolled wheat, corn-soya mix, wheat-soya blend, oats, barley, and rice, as well as agricultural materials.

11.7.1.3 Miscellaneous grain trade statistics

Lake shipments of grain. The 1972 navigation season opened at the Canadian Lakehead on April 14 and closed on December 30. Details of lake shipments for 1971 and 1972 are given in Table 11.37.

Licensed grain storage. Total grain storage capacity in Canada, licensed under the provisions of the Canada Grain Act by the Canadian Grain Commission, amounted to 685.4 million bu at December 1, 1971, compared with 699.5 million bu at the same date in 1970 (Table 11.38). On July 31, 1972, 54.7% of the licensed storage capacity was occupied as compared with 62.1% on the same date of 1971.

Production and exports of wheat flour. Production of wheat flour in the 1972-73 crop year amounted to 38.0 million cwt and wheat milled for flour totalled 86.4 million bu; both were below the corresponding totals for 1971-72. Of the wheat milled for flour, approximately 70.0 million bu were western Canadian spring wheat (other than durum) and the remainder was made up of 7.4 million bu of Ontario-grown winter wheat, 5.7 million bu of durum wheat and 3.2 million bu of other types. Utilization of milling capacity, based on a daily operating potential of some 166,000 cwt, averaged 76.0% in 1972-73 compared with 75.9% in the previous year. Figures for the crop years ended July 31, 1970-73, including exports of wheat flour, are given in Table 11.39.

11.7.2 Livestock marketings

Slaughter cattle and calves marketed at stockyards and shipped directly to packing plants amounted to 3.0 million head in 1973, down 6.6% from 3.2 million head in 1972. All provinces showed decreases except British Columbia and Nova Scotia.

Pig marketings totalled 9.0 million in 1973, down 3.4% from 9.4 million in 1972. Decreases occurred in all provinces except Manitoba, Quebec and Prince Edward Island.

Sheep and lambs marketed in 1973 totalled 258,785 compared to 243,691 in 1972. Increases in British Columbia, Alberta, and Nova Scotia more than offset decreases in the other provinces.

11.8 Government aid and controls

11.8.1 The role of government in the grains industry

Government's interest and involvement in the grains industry predates Confederation and is a record of policies relating to land use and settlement; transportation; grain elevators, storage, handling and forwarding; marketing methods and opportunities; income security; and the many ramifications of international competition and the search for international co-operation in the sale of grain. The federal government's role in the grains industry is carried out through the Department of Agriculture, the Department of Industry, Trade and Commerce and two semi-autonomous bodies which report to Parliament through Ministers of the Crown: the Canadian Grain Commission and the Canadian Wheat Board. The Minister responsible for the Canadian Wheat Board is the Minister designated as being primarily responsible for federal government grains policy, at present the Minister of Justice.

Three other agricultural agencies also play integral roles in the Canadian grains industry: the Canadian International Grains Institute, the Canada Grains Council and the Special Advisory Group on Grains (Grains Group). The Canadian International Grains Institute contributes to the maintenance and expansion of markets for Canadian grains and oilseeds and their products in Canada and abroad. The Canada Grains Council provides a forum for co-ordination, consultation and consensus on industry recommendations to government. The Special Advisory Committee on Grains (Grains Group) is charged with co-ordinating, reviewing and recommending federal policies on grains.

11.8.1.1 Grains Group

In 1970 the Minister responsible for the Canadian Wheat Board organized the Special Advisory Group on Grains (known as the Grains Group) made up of policy advisers drawn from the Canada Department of Agriculture, the Department of Industry, Trade and Commerce, the Canadian Transport Commission and the railways. Under the Minister's direction the Grains Group examines the problems of the grains industry in the areas of production, transportation and handling, and marketing, proposes measures to adjust grains production to known and projected markets, identifies and develops market opportunities, and stimulates more efficient handling and transportation of grain of the types and quantities required to meet domestic and export market demands. It also co-ordinates, reviews and recommends federal policies for grains and grain production. Implementation of recommended policies subse-

quently adopted by the government is through government departments or other agencies concerned with the grains industry.

Production. The Canada Department of Agriculture conducts a research program in plant breeding and production methods to improve varieties, yields and quality of grains for which there is a domestic and export demand. A recent innovation has been the provision, well in advance of spring planting, of information on initial prices to be guaranteed to farmers for the new crop of wheat, oats and barley, and on minimum deliveries to be accepted by the Canadian Wheat Board during the crop year. These are announced by the Minister responsible for the Canadian Wheat Board on or before March 1 of each year.

The Grains Group is also involved in the Two-Price Wheat Program which will remain in effect for seven years. Canadian millers will pay the Canadian Wheat Board \$3.25 a bu for grain grown in Canada, which they buy for domestic human consumption. The federal government will pay to the Wheat Board the difference between the millers' \$3.25 a bu and the going export price, up to \$5.00 a bu. Thus the Canadian producer has a guaranteed floor price on domestic sales of milling wheat of \$3.25 a bu.

Transportation and handling. The Grains Group undertook a number of studies to identify the constraints and alternatives to the system. In August 1972 the results of these studies were released to the Canada Grains Council in Winnipeg. Through the Grain Handling and Transportation Committee of the Council, producers and other segments of the industry are helping to draft formulating recommendations about the scope and development of grain handling and transportation.

In 1972 the government purchased 2,000 specially designed hopper cars to maintain the movement of grain to ports. In March 1974 the purchase of another 4,000 hopper cars and an agreement with the railways on a repair program for 2,400 boxcars which will put these cars into service over the next five years was announced.

Marketing. To broaden the assistance provided for sales and market development of grains, oilseeds and products, the pertinent services of the Department of Industry, Trade and Commerce are consolidated in the Grain Marketing Office. Regular contact is maintained with the Canadian Wheat Board, other agencies and organizations concerned with grain marketing, trade commissioners abroad and the private trade sector. A program of trade promotion that includes participation in missions and trade fairs abroad is also maintained.

The Grains and Oilseeds Marketing Incentives Program, established to improve initiative, particularly in the private sector, provides assistance in the form of cost or risk sharing to a variety of projects designed to increase the sales of grains, oilseeds and their derivatives. Assistance is normally provided to worthwhile projects which would not be realized without incentives. Canadian companies, agencies, industry associations, universities, institutes and similar bodies are qualified applicants. Projects implemented or under consideration cover various fields, including grain handling, storage, processing, market testing of products, developing new products or processes, feeding trials and demonstrations and feasibility studies related to expansion of exports of grains, oilseeds and their products.

With the co-operation of the processing industry, provincial governments and universities, a \$4 million pilot plant was established in Saskatoon. The POS Pilot Plant Corporation is a non-profit corporation (directed by subscribing members) which provides unique pilot-plant facilities to the Canadian grains and oilseeds processing industry.

Credit. Canada has been selling grain on credit since 1952. The original program provided for grain sales on terms of up to three years at commercial rates of interest. In 1968 the government approved a broadened and improved program for the sale of Canadian grain on credit to improve its competitive position in export markets. The new program allowed exporters to respond quickly to export opportunities in developing countries on more favourable credit terms.

Most credit sales of western grains are on terms of three years or less, financed under Section 12 of the Canadian Wheat Board Act with a government guarantee. Credit sales of other than the western wheat, oats and barley which are marketed by the Wheat Board, or any sales on terms of more than three years, are insured under Section 27 of the Export Development Act. In the 1972-73 crop year 200 million bu of wheat and flour, more than one third of total Canadian wheat exports, were sold on credit.

Food aid. The Canadian Food Aid Program was expanded in 1963 when the government announced its intention to progressively increase the amount of Canadian food aid, in proportion to the total assistance given to each country. Since 1963 food aid under bilateral and multilateral aid programs administered by the Canadian International Development Agency has moved increasing amounts of wheat and flour. Total food aid allocations rose from \$2 million in 1962-63 to \$100 million in 1966-67. For the fiscal year 1973-74 \$95.5 million was granted. In addition Canada makes regular contributions, averaging \$1 million in flour to United Nations Relief and Works Agency for Palestinian refugees.

Aid shipments of wheat and flour contribute significantly to the total volume of grain exports. In the five-year period 1965-70, an annual average of 33 million bu of aid wheat and flour was shipped abroad, compared with 6.9 million bu in the previous five years. Some major recipients of Canadian aid hope to become self-sufficient in food grains in the future, but because of uncertainties of weather and other factors like disease and pest control it is expected that grains and their products will continue to be an important part of Canada's aid program. Rapeseed is now included in the aid program. In 1973-74 about \$18 million of the food aid budget is being spent on rapeseed and rapeseed oil for India and Bangladesh.

11.8.1.2 The Canadian Grain Commission

The Canadian Grain Commission was established by the Canada Grain Act on April 1, 1971. It replaced the Board of Grain Commissioners for Canada which was originally established by the Canada Grain Act of 1912. It is composed of a Chief Commissioner and two Commissioners and is under the jurisdiction of the Canada Department of Agriculture. Headquarters of the Commission is at Winnipeg and other offices are situated across Canada, with the largest units at the port areas of Vancouver, Thunder Bay and Montreal.

The Commission is responsible for administration of the Canada Grain Act, including inspection, weighing and storage of grain; for fixing maximum tariffs for charges by licensed elevators; for establishing grain grading standards; and for operation of the Canadian government elevators at Moose Jaw, Saskatoon, Calgary, Edmonton, Lethbridge and Prince Rupert. All operators of elevators in western Canada and elevators in eastern Canada handling western-grown grain for export, as well as grain dealers in western Canada, must be licensed by the Commission and must file security by bond or otherwise as a guarantee for the performance of all obligations imposed upon them by the Canada Grain Act or by the Canada Grain Act Regulations. On a fee basis, the Commission provides mandatory official inspection, grading and weighing of grain, as well as registration of terminal elevator and eastern elevator receipts. The Economics and Statistics Division of the Commission is the basic source of information on grain handled through the Canadian licensed elevator system.

The Commission's Grain Research Laboratory conducts surveys of the quality of each year's grain crops and of grain moving through the Canadian elevator system. It provides information on the quality of varieties and grades of grain to the Inspection Division, collaborates with plant breeders in studies on new grain varieties and undertakes basic research in relation to quality characteristics of cereal grains and oilseeds. With the introduction of the protein factor in segregating wheat grades, the Commission has extended and decentralized its protein-testing facilities and is now able to test samples drawn from carlots of wheat and make the results known to terminal elevator operators prior to unloading cars at the terminals. The Laboratory monitors this protein testing to ensure uniformity among testing units, and also assists in testing the quality of cereals developed by plant breeders to determine the licensing potential of the variety.

The Commission has five Assistant Commissioners — one in Alberta, two in Saskatchewan, one in Manitoba and one in Ontario — who investigate complaints of producers and inspect licensed elevators in their respective provinces. All grain elevators with their equipment and stocks of grain may be inspected at any time by officials of the Commission.

The Commission sets up western and eastern grain standards committees which participate in establishing grain grades and grade specifications and recommend standard and export standard samples for various grades of grain. It also appoints grain appeal tribunals to hear appeals against the grading of grain by the Commission's inspectors; decisions of these tribunals are final.

11.8.1.3 The Canadian Wheat Board

The Canadian Wheat Board was established under the Canadian Wheat Board Act of 1935 for the purpose of "marketing in an orderly manner, in interprovincial and export trade, grain grown in Canada". The legislation established the Wheat Board as the sole marketing agency for Prairie wheat, oats and barley sold interprovincially or internationally. Other crops, such as rye, rapeseed, flaxseed, buckwheat and mustard are marketed by the private grain trade.

The sale of Prairie-grown wheat, oats and barley is carried out in one of two ways: sales negotiated directly by the Wheat Board, and those negotiated through grain exporting companies acting as its agents.

Delivery of the kinds, grades and quantities of grain needed by customers is essential to the Wheat Board's marketing program. This is accomplished in two stages: the first involves the delivery of grain by the producer from his farm to the local country elevator; the flow of grain from farms to country elevators is regulated under a delivery quota system which enables the Wheat Board to call for the delivery of the kind and grade of grain required to meet market commitments, and, at the same time, to allocate delivery opportunities equitably among all grain producers. The second stage involves the movement of grain from country elevators to large terminals in eastern Canada, at Thunder Bay, Churchill, and the west coast. The transportation of grain to terminals on the west coast, Thunder Bay and Churchill is carried out by the railways under maximum tariffs established under the terms of the National Transportation Act. The forwarding of grain from Thunder Bay to eastern positions is done largely by lake vessels under freight rates negotiated by the Wheat Board and by private shippers with lake vessel operators. Extensive planning and a high degree of co-ordination within the grain handling and transportation industry are required to carry out the complex task of moving grain from country elevators to forward positions. The Wheat Board, which co-ordinates the entire movement, programs rail shipments from country elevators to terminals on a weekly basis in accordance with sales requirements.

The producer receives payment for his wheat, oats and barley in two stages. An initial payment price is established by Order in Council before the start of a crop year; this price, less handling costs at the local elevator and transportation costs to Thunder Bay or Vancouver, is the initial price received by the producer and is, in effect, a guaranteed floor price. If the Wheat Board, in selling the grain, does not realize this price and the necessary marketing costs, the deficit is borne by the federal treasury; after the end of the crop year when the Board has sold all the grain or otherwise disposed of it in accordance with the Canadian Wheat Board Act, the Board, if authorized by Order in Council, makes a final payment to producers.

Under the Prairie Grain Advance Payments Act, administered by the Board, producers may receive, through their elevator agents, interest-free cash advances on farm-stored grain in accordance with a prescribed formula. The purpose of this legislation is to make cash available to producers pending delivery of their grain under the quotas established.

The federal government makes a separate payment to the Canadian Wheat Board of up to a maximum of \$1.75 a bu for bread wheats and \$2.00 a bu for durum wheat. This payment represents the difference between the domestic and export price of Canadian wheat.

11.8.1.4 The Canadian International Grains Institute

The Canadian International Grains Institute was incorporated in July 1972; it operates in affiliation with the Canadian Wheat Board and the Canadian Grain Commission and financial responsibility is shared by the federal government and the Canadian Wheat Board. It is designed to contribute to the maintenance and enlargement of markets at home and abroad for Canadian grains, oilseeds and their products, and offers instructional programs to foreign participants selected from countries purchasing these commodities and to Canadians associated with the grain industry. Courses are offered in grain handling, transportation, marketing, flour milling, bread baking and macaroni manufacturing, and lectures and practical training are given in analytical methods used in processing and utilization of grains and oilseeds. The Institute is located in the Canadian Grain Commission Building in Winnipeg. Facilities include classrooms, conference rooms, offices, library, laboratories, a nine-ton, 24-hour-capacity flour mill and a pilot bakery.

11.8.1.5 The Canada Grains Council

The Canada Grains Council was established in 1969 to improve co-ordination and to

assist in reaching agreement within the industry on recommendations to government. Its principal aim is to increase Canada's share of world markets for all grains and grain products and to effect their efficient utilization domestically. Membership in the Council is open to all non-governmental organizations and associations whose members are directly engaged in grain production, processing, handling, transportation or marketing.

The administrative costs of the Council are shared by the federal government and the industry members. As of April 1974 the Council had 27 member organizations representing several thousand individuals. At least two general meetings are held each year; the Board of Directors meets about 10 times a year. The Council is served by a small secretariat.

11.8.2 Government involvement in other farm products

Governments in Canada at both the federal and provincial levels have from the beginning enacted measures to improve and expand the performance of the agricultural sector. Originally, the emphasis was on production increases and the control and eradication of pests and diseases. Gradually, however, with rising production and increasing specialization on the part of farmers, problems in marketing began to emerge.

To ensure quality, inspection and grading procedures and standards were established, but the periodic collapse of prices caused by bumper crops and intensified by the general inability of large numbers of producers to bargain on an equitable basis with far fewer buyers has been a much more difficult part of the marketing problem.

The first attempts to provide bargaining power to producers was the organization of voluntary marketing co-operatives. All provinces eventually passed legislation for incorporation of these co-operatives, and most of them also provided additional assistance in various forms. Federally, the introduction of the Agricultural Products Co-operative Marketing Act provided for financial guarantees to producers willing to market their crops on a pooling-of-returns basis. Further information on the role of co-operative organizations is given in Chapter 18.

Although much co-operative marketing was successful, particularly in the first years of incorporation, it was found that the voluntary aspect for many marketing co-operatives was a serious weakness. Many members dropped out in good times to make their own deals. A type of marketing organization was needed with the legal power to control the output of all producers of a certain product in a certain area, and as a result marketing control legislation was adopted providing for various types of boards and agencies.

11.8.2.1 Product controls

The federal and provincial departments of agriculture co-operate in establishing and enforcing grades of quality standards for various foods. Some control over size and types of containers used for distribution of agricultural products is exercised by the Canada Department of Agriculture, and the Department of Consumer and Corporate Affairs enforces regulations pertaining to weights and measures.

Standards related to health and sanitation in food handling are developed and enforced at all three levels of government — municipal, provincial and federal. Examples of provincial and municipal action include laws pertaining to pasteurization of milk, inspection of slaughterhouses and sanitary standards in restaurants. At the federal level, inspection by the Health of Animals Branch of the Canada Department of Agriculture of all meat carcasses that enter into interprovincial trade is required; the Foods and Drugs Directorates of the Department of National Health and Welfare have wide responsibility for food composition standards; and the Department of Consumer and Corporate Affairs has jurisdiction over advertising.

11.8.2.2 Marketing controls

The Agricultural Products Co-operative Marketing Act (RSC 1970, c.A-6) was passed in 1939 as a result of a federal government decision to assist orderly marketing by encouraging the establishment of pools that would give the producer the maximum sales return for his product, less a maximum margin for handling expenses agreed upon in advance. The Wheat Co-operative Marketing Act was passed at the same time but was in effect for only one year, and the Agricultural Products Co-operative Marketing Act now covers the marketing of all agricultural products except wheat produced in the Canadian Wheat Board area.

The purpose of this Act is to aid farmers in pooling the returns from sale of their products by guaranteeing initial payments and thus assisting in the orderly marketing of the product.

The government may undertake to guarantee a certain minimum initial payment to the producer at the time of delivery of the product, including a margin for handling; sales returns are made to the producer on a co-operative plan. The guaranteed initial payment may be up to a maximum of 80% of the average price paid to producers for the previous three years, the exact percentage to be recommended by the Minister of Agriculture who enters into an agreement with the selling agency for the product. For 1973 crops, agreements were made for marketing apples in Quebec and beans in Ontario.

Milk control legislation was enacted in nearly all provinces prior to 1940. Most provinces finance these milk control agencies partly from public funds and partly through the collection of licence fees and assessments from those engaged in the fluid milk industry. Milk control agencies have the authority to license those engaged in the fluid milk industry and can revoke licences for failure to conform with agency orders.

In all provinces with such boards, the milk control board or similar agency sets the minimum price which distributors in specified markets may pay producers for Class I milk, that is, milk actually sold for fresh fluid consumption. In British Columbia, a formula is used as a guide in determining minimum prices to producers. Most provinces set either minimum or maximum wholesale and retail prices for fluid milk. Quebec sets a minimum and maximum price range. Saskatchewan sets minimum prices applicable to all retail milk sales and maximum prices applicable to milk sales from retail wagons. Minimum prices are in effect in Alberta, Nova Scotia and New Brunswick. Maximum prices are set in Manitoba and no control is exercised over milk prices at the wholesale and retail levels in Ontario and British Columbia. In these three provinces some degree of price competition has developed between store sales and home delivery.

The powers given to milk control boards include: authority to inquire into all matters pertaining to the fluid milk industry, to define market areas, to arbitrate disputes, to examine the books and records of those engaged in the industry, to issue and revoke licences and to establish a price for milk; and authority to require a bond and periodic reports from distributors, payments to be made to producers by a certain date each month, distributors to give statements to suppliers or to give notice before ceasing to accept milk from any producer, and producers to give notice before ceasing to deliver milk to any distributor.

The Ontario Milk Marketing Board, a producer-controlled agency, was officially established by the Milk Commission of Ontario on November 1, 1965. Certain powers were assigned to it by the Commission regarding the production, marketing and transportation of milk.

The Canadian Dairy Commission, established in 1966, was a new development in the area of agricultural marketing because it was the first national marketing board to be established since creation of the Canadian Wheat Board in 1935. The Commission has the power to purchase any dairy product and package, process, store, ship, insure, import, export or sell or otherwise dispose of any dairy product purchased by it. The Commission may also make payments to producers of milk and cream for the purpose of stabilizing the price of these products.

A comprehensive milk marketing plan was agreed to by the Canadian Dairy Commission and the milk marketing agencies of Ontario and Quebec in January 1971, establishing a market-sharing quota system for industrial milk and that portion of milk shipped by fluid producers which is used for manufacturing purposes. The agreement also covered cream shippers in Quebec, and cream shippers in Ontario entered the plan on April 1, 1971. Prince Edward Island was the third province to enter into the program, which became effective in that province on December 6, 1971. Producers in Alberta entered on April 1, 1972 and Manitoba and Saskatchewan came under the program on July 1, 1972. British Columbia entered the program on October 1, 1973, and Nova Scotia on May 1, 1974. More than 98% of the manufacturing milk and cream sold in Canada now comes under the market-sharing program. With the market-sharing arrangement, each producer receives a market price related to Canadian price support levels for deliveries up to his market share. Prices for deliveries over market share are related to world prices for surplus dairy products.

Additional information on the role of the Commission with regard to dairy production and income stabilization is given in Section 11.2.2.

Producer marketing boards were introduced during the 1930s to give agricultural producers legal authority under certain conditions to control the marketing of their produce. The Natural

Products Marketing Act of 1934 attempted to provide this power at the federal level but the courts ruled that the subject was outside federal jurisdiction. The subsequently introduced Natural Products Marketing (British Columbia) Act, 1936 was found to be within the powers of provincial governments and it has since been used as a model for marketing board legislation as it evolved in all 10 provinces.

While marketing board legislation has been revised from time to time on the basis of experience and there are variations in detail from province to province, the same basic powers are given to producers in all provinces. These include authority for a duly constituted producer board to control the marketing of 100% of a specified commodity produced in a designated area. A producer board, in at least some provinces, may set production quotas for each farmer. One producer board may control the marketing of several related commodities and the designated area may be either the whole or part of a province. A producer vote is usually required to establish a producer marketing board whose powers are delegated either by a provincial marketing board, which has certain supervisory authority, or by the Lieutenant Governor in Council.

The powers of a producer marketing board provided by provincial legislation are necessarily limited to trade within the province. Under the Agricultural Products Marketing Act (RSC 1970, c.A-7), the federal government may delegate to a marketing board powers with respect to interprovincial and export trade similar to those it holds under provincial authority with respect to intraprovincial trade. This Act also gives the Governor in Council the right to authorize a provincial marketing board to impose and collect levies from persons engaged in the production and marketing of commodities controlled by it for the purposes of the board including the creation of reserves and the equalization of returns.

The federal Farm Products Marketing Agencies Act was passed in January 1972 and is the enabling legislation for the creation of national marketing agencies or boards. National agencies may be set up, when producers and provincial authorities desire it, for any agricultural commodities which, due to widespread production in Canada or for other reasons, cannot be effectively marketed in an orderly manner under the jurisdiction of individual provincial boards. The Act establishes a National Farm Products Marketing Council to advise the Minister of Agriculture on all matters relating to the establishment and operation of national agencies, to review the performance of and assist in promoting effective marketing by these agencies and to consult with interested provinces on a continuing basis concerning the establishment of national marketing agencies. The first national agency formed under the Act, the Canadian Egg Marketing Agency, commenced operations in June 1973.

During 1972 there were 100 marketing boards in operation in Canada, including the milk control boards mentioned earlier in this Section, and the Canadian Wheat Board which is a federal board. Boards have now been established in all provinces, led by Quebec with 25 and Ontario with 20. An estimated 56% of 1972 farm cash income was received from sales made under the jurisdiction of marketing boards. A variety of agricultural commodities were sold under marketing boards, including grains, pigs, milk, fruit, potatoes and other vegetables, tobacco, poultry, eggs, wool, soya beans, honey, maple products and wood from farm woodlots. By the end of 1973, the federal government had delegated authority to 73 provincial boards to control their products in interprovincial and export trade.

Sources

- 11.1 Information Division, Canada Department of Agriculture.
- 11.2 Information Division, Canada Department of Agriculture; Agriculture Stabilization Board; Grains Group, Department of Industry, Trade and Commerce; Crop Insurance Division, Canada Department of Agriculture; Canadian Dairy Commission; Canadian Livestock Feed Board; Farm Credit Corporation; Guaranteed Loans Administration, Department of Finance; Grain Marketing Office, Department of Industry, Trade and Commerce.
- 11.3 Supplied by respective provincial government departments.
- 11.4 Agriculture Division, Industry Statistics Branch, Statistics Canada; except Tobacco: Food, Beverages and Textiles Section, Manufacturing and Primary Industries Division, Statistics Canada.
- 11.5 Census of Agriculture Division, Census Field, Statistics Canada.
- 11.6 - 11.7 Agriculture Division, Industry Statistics Branch, Statistics Canada.
- 11.8 Grains Group, Department of Industry, Trade and Commerce; Marketing and Trade Division, Canada Department of Agriculture.

Tables

..	not available	Equivalent values of metric units:
...	not appropriate or not applicable	1 hectare (ha) = 2.47 acres
—	nil or zero	1 metric ton (t) wheat = 36.744 bu
--	too small to be expressed	oats = 64.842 bu
e	estimate	barley = 45.930 bu
p	preliminary	certain tables may not add due to rounding
r	revised	

It should be noted that figures shown for the latest year are subject to revision, and that some figures for earlier years have been revised. Figures for Newfoundland are not included, as agricultural activity there is of minor importance and production small.

11.1 Cash receipts from farming operations (excluding supplementary payments), by province, 1969-73 (thousand dollars)

Province	1969	1970	1971	1972	1973
Prince Edward Island	37,870	44,613	38,868	44,782	72,002
Nova Scotia	63,380	67,644	65,618	73,919	94,692
New Brunswick	51,281	58,486	52,801	65,117	95,571
Quebec	672,495	667,414	690,125	772,024	962,358
Ontario	1,377,900	1,410,863	1,427,965	1,637,699	1,947,551
Manitoba	349,912	335,731	367,841	478,478	611,642
Saskatchewan	712,416	686,057	901,408	1,172,288	1,435,534
Alberta	727,169	705,280	776,886	896,023	1,193,241
British Columbia	197,461	216,585	223,048	246,038	316,648
Total	4,189,884	4,192,673	4,544,560	5,386,368	6,729,239

11.2 Cash receipts from farming operations, by commodity or other source, 1970-73 (thousand dollars)

Item	1970	1971	1972	1973
Wheat	570,141	645,981	828,431	867,654
Wheat, Canadian Wheat Board payments	6,566	75,202	118,426	331,182
Oats	20,925	31,619	26,321	30,723
Oats, Canadian Wheat Board payments	—	1,738	5,314	12,861
Barley	144,663	192,270	217,332	229,771
Barley, Canadian Wheat Board payments	—	16,606	2,966	100,800
Canadian Wheat Board cash advances	132,646	72,998	23,249	29,947
Canadian Wheat Board cash advance repayments	-238,043	-157,563	-50,698	-23,476
Deferred grain receipts	—	—	—	-305,246
Rye	8,472	10,013	12,082	19,852
Flaxseed	59,745	57,075	53,760	119,063
Rapeseed	96,762	134,449	151,220	252,278
Soya beans	23,732	27,898	35,784	50,348
Corn	49,376	59,186	60,183	101,847
Sugar beets	15,145	18,576	20,902	22,293
Potatoes	90,055	73,297	78,958	171,174
Fruits	91,776	92,847	99,177	117,567
Vegetables	125,072	129,873	141,949	159,853
Tobacco	154,809	135,347	150,083	142,821
Other crops	116,412	134,408	150,472	192,243
Total, cash receipts from crops	1,468,254	1,751,820	2,125,911	2,623,555
Cattle and calves	975,962	1,059,603	1,204,978	1,479,511
Pigs	484,507	428,718	590,424	831,846
Sheep and lambs	7,876	7,805	8,991	10,673
Dairy products	678,883	705,697	778,590	850,008
Poultry	262,711	262,578	295,853	437,939
Eggs	172,804	151,717	163,777	243,790
Other livestock and products	43,561	46,077	56,266	76,767
Total, cash receipts from livestock and products	2,626,304	2,662,195	3,098,879	3,930,534
Forest and maple products	28,214	28,970	37,062	43,995
Dairy supplementary payments	66,603	100,336	101,410	131,022
Deficiency payments	3,298	1,239	23,106	133
Total, cash receipts excl. supplementary payments	4,192,673	4,544,560	5,386,368	6,729,239
Supplementary payments	58,207	18,255	76,954	71,867
Total, cash receipts	4,250,880	4,562,815	5,463,322	6,801,106

11.3 Net income of farm operators from farming operations¹, by item and by province, 1970-73 (thousand dollars)

Item and province	1970	1971	1972	1973
ITEM				
1. Cash receipts from farming operations	4,192,673	4,544,560	5,386,368	6,729,239
2. Income in kind	562,994	537,645	559,141	677,053
3. Supplementary payments	58,207	18,255	76,954	71,867
4. Realized gross income (items 1+2+3)	4,813,874	5,100,460	6,022,463	7,478,159
5. Operating and depreciation charges	3,468,973	3,632,430	3,880,692	4,771,808
6. Realized net income (items 4-5)	1,344,901	1,468,030	2,141,771	2,706,351
7. Value of inventory changes	60,429	182,940	-295,326	637,592
8. Total gross income (items 4+7)	4,874,303	5,283,400	5,727,137	8,115,751
Total, net income (8-5)	1,405,330	1,650,970	1,846,445	3,343,943
PROVINCE				
Prince Edward Island	14,960	5,064	12,479	29,686
Nova Scotia	20,956	15,562	22,589	31,446
New Brunswick	22,250	15,741	18,807	42,567
Quebec	232,624	200,070	262,053	355,646
Ontario	445,269	393,835	512,449	704,092
Manitoba	95,871	170,533	185,703	380,937
Saskatchewan	236,009	487,516	405,439	938,945
Alberta	251,585	276,423	336,662	725,519
British Columbia	85,806	86,226	90,264	135,105

¹Includes estimated value of farm homes, supplementary payments made under the provisions of the Prairie Farm Assistance Act and payments under the Western Grain Producers' Acreage Payment Regulations.

11.4 Acreages, yields and prices of principal field crops, 1969-73, with average for 1964-68

Crop and year	Area '000 acres	Yield per acre	Production '000 bu	Average price \$ per bu	Total value ¹ \$'000
Wheat					
Av. 1964-68	29,448	22.6	664,075	1.61	1,068,207
1969	24,962	26.9	671,212	1.27	852,385
1970	12,483	26.6	331,579	1.44	476,614
1971	19,407	27.3	529,552	1.35	717,345
1972	21,350	25.0	533,288	1.86	993,349
1973	24,761	25.4	628,738	..	..
Oats					
Av. 1964-68	7,810	45.5	355,228	0.70	247,530
1969	7,298	48.6	354,895	0.59	208,202
1970	6,882	51.3	353,073	0.60	211,438
1971	6,831	53.2	363,479	0.57	206,739
1972	6,104	49.2	300,208	0.89	266,733
1973	6,698	48.8	326,880	..	..
Barley					
Av. 1964-68	7,211	35.0	252,382	0.94	238,001
1969	9,358	39.7	371,288	0.67	247,244
1970	9,894	41.3	408,287	0.75	307,415
1971	13,980	43.0	601,628	0.69	412,660
1972	12,509	41.4	518,316	1.25	646,184
1973	11,958	39.7	474,570	..	..
Rye					
Av. 1964-68	717	20.2	14,478	1.06	15,339
1969	848	17.9	15,155	0.89	13,511
1970	832	22.7	18,905	0.89	16,879
1971	957	22.9	21,915	0.81	17,711
1972	634	21.3	13,524	1.44	19,521
1973	634	22.5	14,282	..	..
Mixed grains					
Av. 1964-68	1,661	47.8	79,414	0.90	71,115
1969	1,753	50.1	87,820	0.81	71,376
1970	1,959	50.7	99,271	0.84	83,286
1971	2,055	52.1	107,078	0.81	86,446
1972	2,065	50.5	104,285	0.99	103,257
1973	2,002	48.5	97,013	..	..
Flaxseed					
Av. 1964-68	1,751	11.5	20,209	2.83	57,092
1969	2,341	12.0	28,048	2.57	72,042
1970	3,313	14.5	47,966	2.21	105,963
1971	1,768	12.7	22,387	2.20	49,282
1972	1,321	13.3	17,617	4.02	70,863
1973	1,450	13.4	19,400	..	..
Potatoes					
Av. 1964-68	300	cwt 158.5	'000 cwt 47,494	\$ per cwt 2.09	99,247
1969	305	169.9	48,361	2.28	110,473
1970	316	174.6	50,604	2.16	109,370
1971	268	181.8	45,317	1.84	83,318
1972	244	179.8	43,886	3.65	160,356
1973	262	178.5	46,803	..	..

11.4 Acreages, yields and prices of principal field crops, 1969-73, with average for 1964-68 (concluded)

Crop and year	Area '000 acres	Yield per acre	Production	Average price	Total value ¹ \$'000
		<i>ton</i>	<i>'000 tons</i>	<i>\$ per ton</i>	
Tame hay					
Av. 1964-68	12,688	1.84	23,290	18.71	435,774
1969	12,138	2.03	24,598	18.33	450,977
1970	12,978	2.08	26,958	19.02	512,731
1971	12,354	2.00	24,732	20.04	495,636
1972	12,859	1.86	23,929	23.08	552,356
1973	13,200	2.00	26,448		

¹Gross value of farm production; does not represent cash income from sales.

11.5 Acreages and production of field crops 1972 and 1973, and values 1971 and 1972, by province

Field crop and province	Area ('000 acres)		Total production		Gross farm value (\$'000)	
	1972	1973	1972	1973	1971	1972
			<i>'000 bu</i>	<i>'000 bu</i>		
WHEAT	21,350	24,761	533,288	628,738	717,345	993,349
Prince Edward Island	7	8	301	284	383	530
Nova Scotia	4	3	159	95	299	286
New Brunswick	5	4	163	96	313	253
Quebec	41	44	758	1,091	1,778	1,524
Ontario						
Winter	365	375	15,878	14,812	24,223	27,310
Spring	13	12	429	360	743	738
Manitoba	2,600	3,100	69,000	80,000	101,380	128,340
Saskatchewan	13,900	16,200	326,000	395,000	465,750	612,880
Alberta	4,300	4,900	118,000	134,000	118,300	217,120
British Columbia	115	115	2,600	3,000	4,176	4,368
OATS	6,104	6,698	300,208	326,880	206,739	266,733
Prince Edward Island	49	49	2,695	2,107	1,915	2,399
Nova Scotia	17	17	884	617	628	796
New Brunswick	45	47	2,088	1,748	1,732	1,775
Quebec	680	675	23,392	19,912	24,278	25,029
Ontario	590	540	30,149	25,596	27,096	27,134
Manitoba	1,140	1,300	55,000	63,000	40,280	49,500
Saskatchewan	1,690	2,000	79,000	99,000	57,720	70,310
Alberta	1,830	2,000	104,000	111,000	50,500	87,360
British Columbia	63	70	3,000	3,900	2,590	2,430
BARLEY	12,509	11,958	518,316	474,570	412,660	646,184
Prince Edward Island	25	18	1,350	518	1,323	1,606
Nova Scotia	8	7	363	187	405	465
New Brunswick	9	12	376	355	330	432
Quebec	42	51	1,289	1,255	1,808	1,869
Ontario	375	350	18,338	17,255	21,052	22,556
Manitoba	2,100	2,100	85,000	83,000	65,800	107,100
Saskatchewan	4,600	4,200	177,000	164,000	166,320	217,710
Alberta	5,200	5,050	230,000	202,000	150,080	289,800
British Columbia	150	170	4,600	6,000	5,542	6,646
FALL RYE	593	592	12,784	13,517	16,976	18,402
Quebec	2	2	44	41	52	55
Ontario	50	48	1,510	1,320	1,241	1,661
Manitoba	80	80	1,800	2,100	2,438	2,358
Saskatchewan	260	240	4,700	4,600	8,640	7,050
Alberta	200	220	4,700	5,400	4,559	7,238
British Columbia	1	2	30	56	46	40
SPRING RYE	42	42	740	765	735	1,119
Manitoba	2	2	30	45	22	39
Saskatchewan	20	20	330	320	352	495
Alberta	20	20	380	400	361	585
ALL RYE	634	634	13,524	14,282	17,711	19,521
Quebec	2	2	44	41	52	55
Ontario	50	48	1,510	1,320	1,241	1,661
Manitoba	82	82	1,830	2,145	2,460	2,397
Saskatchewan	280	260	5,030	4,920	8,992	7,545
Alberta	220	240	5,080	5,800	4,920	7,823
British Columbia	1	2	30	56	46	40
PEAS	68	69	1,587	1,649	3,838	3,889
Quebec	1	1	10	8	56	45
Ontario	2	2	27	28	78	78
Manitoba	45	35	1,000	840	2,100	1,900
Saskatchewan	5	6	100	150	340	250
Alberta	14	24	400	600	1,118	1,520
British Columbia	2	1	50	23	146	96
BEANS	134	133	3,233	2,885	18,362	17,736
Quebec	1	1	18	18	97	86
Ontario	133	132	3,215	2,867	18,265	17,650
SOYA BEANS	405	470	13,770	14,570	30,417	53,703
Ontario	405	470	13,770	14,570	30,417	53,703

11.5 Acreages and production of field crops 1972 and 1973, and values 1971 and 1972, by province (concluded)

Field crop and province	Area ('000 acres)		Total production		Gross farm value (\$'000)	
	1972	1973	1972	1973	1971	1972
BUCKWHEAT			<i>'000 bu</i>	<i>'000 bu</i>		
New Brunswick	103	89	1,711	1,129	3,662	2,372
Quebec	2	2	88	42	68	107
Ontario	10	11	170	187	330	224
Manitoba	10	8	238	200	336	343
Saskatchewan	75	65	1,150	650	2,400	1,610
Alberta	6	4	65	50	340	88
	—	—	—	—	188	—
MIXED GRAINS						
Prince Edward Island	2,065	2,002	104,285	97,013	86,446	103,257
Nova Scotia	67	81	3,819	3,402	3,046	4,010
New Brunswick	7	7	402	221	359	422
Quebec	7	6	344	231	369	351
Ontario	126	120	4,448	3,384	6,145	5,960
Manitoba	890	875	51,442	49,350	48,117	51,442
Saskatchewan	290	295	12,500	12,500	8,775	13,500
Alberta	220	210	9,000	8,800	6,440	8,460
British Columbia	450	400	22,000	18,800	12,780	18,700
	8	8	330	325	415	412
FLAXSEED						
Quebec	1,321	1,450	17,617	19,400	49,282	70,863
Ontario	—	—	—	—	139	—
Manitoba	—	—	17	—	54	53
Saskatchewan	500	600	5,900	7,600	12,862	24,190
Alberta	650	650	9,000	8,900	28,380	35,820
British Columbia	170	200	2,700	2,900	7,840	10,800
	—	—	—	—	7	—
RAPESEED						
Manitoba	3,270	3,150	57,300	53,200	205,530	181,086
Saskatchewan	470	400	8,500	7,700	25,800	26,350
Alberta	1,500	1,450	24,800	24,000	109,650	79,856
	1,300	1,300	24,000	21,500	70,080	74,880
SUNFLOWER SEED			<i>'000 lb.</i>	<i>'000 lb.</i>		
Manitoba	217	129	170,000	90,900	9,238	11,555
Saskatchewan	190	125	152,000	87,500	7,091	10,640
Alberta	23	2	15,000	2,000	1,841	750
	4	2	3,000	1,400	306	165
MUSTARD SEED						
Manitoba	180	335	151,500	262,000	6,127	5,044
Saskatchewan	15	40	12,500	32,000	312	562
Alberta	140	225	115,000	180,000	4,693	3,738
	25	70	24,000	50,000	1,122	744
SHELLED CORN			<i>'000 bu</i>	<i>'000 bu</i>		
Quebec	1,327	1,286	99,538	108,941	136,990	164,100
Ontario	114	95	7,638	7,011	18,792	14,359
Manitoba	1,200	1,175	91,200	101,050	117,648	148,656
	13	16	700	880	550	1,085
POTATOES			<i>'000 cwt</i>	<i>'000 cwt</i>		
Prince Edward Island	244	262	43,886	46,803	83,318	160,356
Nova Scotia	39	41	8,740	8,610	10,701	33,212
New Brunswick	4	4	597	557	1,176	1,910
Quebec	53	53	12,146	9,964	15,342	45,548
Ontario	46	50	5,005	7,275	12,183	17,017
Manitoba	43	44	7,823	7,717	22,481	32,857
Saskatchewan	22	30	2,500	4,400	7,257	7,500
Alberta	3	3	475	580	792	1,662
British Columbia	23	23	4,100	4,500	7,200	11,275
	12	14	2,500	3,200	6,186	9,375
FIELD ROOTS			<i>'000 tons</i>	<i>'000 tons</i>		
Prince Edward Island	10	10	128	112	4,253	4,056
Nova Scotia	1	1	10	9	123	482
New Brunswick	1	1	4	5	188	198
Quebec	1	1	3	4	104	120
Ontario	4	4	37	44	968	1,036
	5	5	74	50	2,870	2,220
TAME HAY						
Prince Edward Island	12,859	13,200	23,929	26,448	495,636	552,356
Nova Scotia	127	129	203	258	4,035	4,019
New Brunswick	150	152	285	284	6,234	6,099
Quebec	162	164	275	333	5,970	5,596
Ontario	2,650	2,675	4,054	5,377	120,120	122,431
Manitoba	2,700	2,850	6,912	7,296	111,367	147,226
Saskatchewan	1,200	1,200	2,000	2,200	34,650	40,000
Alberta	1,800	1,900	2,500	2,900	52,500	52,250
British Columbia	3,500	3,550	6,200	6,400	118,250	132,060
	570	580	1,500	1,400	42,510	42,675
FODDER CORN						
Quebec	812	892	10,042	11,276	72,064	79,129
Ontario	141	152	1,559	1,991	14,699	16,338
Manitoba	636	700	8,073	8,820	54,625	58,691
Saskatchewan	22	24	160	165	490	1,600
British Columbia	—	—	—	—	56	—
	14	16	250	300	2,194	2,500
SUGAR BEETS						
Quebec	78	69	1,070	994	22,215	21,193
Ontario	6	6	82	106	2,192	1,227
Manitoba	—	—	—	—	—	—
Alberta	28	25	331	308	6,926	7,301
	43	38	657	580	13,097	12,665

*Fewer than 500 acres.

11.6 Acreages and production of grain in the Prairie Provinces, 1969-73

Grain	1969	1970	1971	1972	1973
ACREAGES ('000 acres)					
Wheat	24,400	12,000	18,885	20,800	24,200
Oats	5,430	5,260	5,315	4,660	5,300
Barley	8,800	9,300	13,312	11,900	11,350
Rye	783	765	906	582	582
Flaxseed	2,320	3,300	1,762	1,320	1,450
Rapeseed	2,012	4,050	5,306	3,270	3,150
PRODUCTION ('000 bu)					
Wheat	652,000	312,500	510,000	513,000	609,000
Oats	268,000	277,000	288,000	238,000	273,000
Barley	347,000	382,000	570,000	492,000	449,000
Rye	13,408	17,038	20,520	11,940	12,865
Flaxseed	27,800	47,800	22,300	17,600	19,400
Rapeseed	33,400	72,200	95,000	57,300	53,200

11.7 Carryover of Canadian grain, 10-year average 1960-69 and crop years ended July 31, 1970-72 (thousand bushels)

Grain and year	Total in Canada and United States	Total in Canada	In com- mercial storage in Canada	On farms in Canada	Prairie Provinces	
					On farms	In country elevators
Wheat						
Av. 1960-69	557,491	557,491	399,145	158,346	155,950	224,945
1970	1,008,690	1,008,690	465,990	542,700	540,000	291,158
1971	734,154	734,154	339,334	394,820	392,000	212,181
1972	583,757	583,757	272,257	311,500	308,000	130,257
Oats						
Av. 1960-69	120,742	120,742	33,342	87,400	67,500	21,137
1970	148,340	148,340	18,340	130,000	113,000	9,983
1971	125,373	125,373	34,223	91,150	75,000	23,568
1972	118,257	118,257	22,257	96,000	78,000	13,857
Barley						
Av. 1960-69	115,295	115,265	56,372	58,893	56,300	37,297
1970	205,078	205,078	78,078	127,000	120,000	39,963
1971	144,269	144,269	82,619	61,650	55,000	53,138
1972	175,843	175,843	89,843	86,000	76,000	42,075
Rye						
Av. 1960-69	7,267	7,061	4,742	2,319	2,268	2,032
1970	11,247	10,932	5,632	5,300	5,300	2,216
1971	12,943	12,801	7,401	5,400	5,400	3,705
1972	15,796	15,796	10,296	5,500	5,500	7,216
Flaxseed						
Av. 1960-69	7,071	6,771	5,621	1,150	1,145	1,847
1970	6,570	6,570	5,370	1,200	1,200	2,899
1971	25,306	25,306	16,106	9,200	9,200	6,951
1972	16,032	16,032	10,032	6,000	6,000	5,342

11.8 Livestock slaughtered at inspected establishments, 1969-73

Year	Cattle	Calves	Sheep	Pigs
1969	2,718,567	580,148	212,751	6,973,190
1970	2,700,833	499,162	181,332	8,280,481
1971	2,786,908	464,240	205,082	9,742,759
1972	2,878,591	402,370	214,769	9,357,143
1973	2,878,016	291,524	234,206	9,041,220

11.9 Production and domestic disappearance of poultry meat¹, 1971 and 1972

Year and item	Net production '000 lb.	Total supply '000 lb.	Domestic disappearance '000 lb.	Per capita consumption lb.
1971				
Fowl and chickens	720,761	758,982	726,041	33.6
Turkeys	225,856	258,556	223,710	10.4
Geese	3,893	4,285	4,146	0.2
Ducks	6,555	8,586	7,980	0.4
Total	957,065	1,030,409	961,877	44.5
1972				
Fowl and chickens	756,816	786,096	753,064	34.5
Turkeys	213,150	251,423	227,145	10.4
Geese	3,994	4,133	3,948	0.2
Ducks	7,123	9,048	8,659	0.4
Total	981,083	1,050,700	992,816	45.5

¹Eviscerated weight.

11.10 Production and utilization of milk, by province, 1971-73 (thousand pounds)

Province and year	Milk used in manufacture		Milk otherwise used			Total milk production
	On farms ¹	In factories	Fluid sales ²	Farm-home consumed	Fed on farms	
Prince Edward Island	1971 562	153,976	20,468	10,242	6,892	192,140
	1972 562	151,085	22,135	9,546	6,836	190,164
	1973 234	138,262	23,934	8,633	6,128	177,191
Nova Scotia	1971 2,106	108,002	211,270	9,104	9,253	339,735
	1972 1,591	112,959	215,940	9,283	8,001	347,774
	1973 1,100	100,664	216,512	8,547	7,014	333,837
New Brunswick	1971 2,457	95,615	135,540	8,277	7,386	249,275
	1972 2,434	91,275	137,827	8,501	6,856	246,893
	1973 1,849	79,417	138,284	7,541	6,558	233,649
Quebec	1971 6,037	5,066,811	1,359,536	100,889	180,260	6,713,533
	1972 5,429	4,971,116	1,352,872	101,440	182,370	6,613,227
	1973 4,095	4,615,217	1,392,211	93,598	193,614	6,298,735
Ontario	1971 5,288	3,583,983	2,144,080	92,063	244,300	6,069,714
	1972 4,821	3,821,967	2,208,652	93,872	249,900	6,379,212
	1973 3,603	3,404,882	2,240,428	88,580	271,597	6,009,090
Manitoba	1971 4,189	436,883	240,216	43,347	48,950	773,585
	1972 3,931	469,159	248,558	42,266	48,650	812,564
	1973 2,902	458,962	263,012	38,695	42,837	806,408
Saskatchewan	1971 18,018	374,184	188,839	85,453	56,790	723,284
	1972 16,918	346,027	196,254	85,035	47,250	691,484
	1973 12,636	310,846	195,290	77,934	53,827	650,533
Alberta	1971 17,667	848,314	395,016	82,210	93,610	1,436,817
	1972 15,818	824,403	409,044	80,843	87,840	1,417,948
	1973 11,887	791,621	420,426	73,890	92,620	1,390,444
British Columbia	1971 1,778	345,006	579,679	17,427	27,220	971,110
	1972 1,310	330,205	603,137	17,335	24,950	976,937
	1973 1,123	314,195	626,092	16,353	28,383	986,146
Total	1971 58,102	11,012,774	5,274,644	449,012	674,661	17,469,193
	1972 52,814	11,118,196	5,394,419	448,121	662,653	17,676,203
	1973 39,429	10,214,066	5,516,189	413,771	702,578	16,886,033

¹Used in farm butter only.²Represents milk and cream, in milk equivalent, sold off farms for fluid purposes.**11.11 Farm values of milk production, by province, 1971-73 (thousand dollars)**

Province and year	Value of milk used in manufacture		Value of milk otherwise used			Value of total milk production
	On farms ¹	In factories	Fluid sales ²	Farm-home consumed	Fed on farms ³	
Prince Edward Island	1971 15	4,632	1,193	331	727	6,894 ⁴
	1972 16	4,954	1,423	323	743	7,385 ⁴
	1973 7	5,001	1,771	312	689	7,704 ⁴
Nova Scotia	1971 55	3,285	15,089	290	398	19,117
	1972 43	3,787	16,073	299	350	20,552
	1973 30	3,670	18,549	306	350	22,905
New Brunswick	1971 67	2,469	8,440	267	559	11,802
	1972 68	2,575	9,271	286	557	12,757
	1973 53	2,350	10,751	266	539	13,959
Quebec	1971 173	189,606	81,921	3,824	9,571	275,853 ⁴
	1972 160	208,765	86,707	4,281	9,577	304,885 ⁴
	1973 126	217,094	98,736	4,418	10,893	326,781 ⁴
Ontario	1971 142	134,969	134,806	3,498	12,428	280,130 ⁴
	1972 136	154,539	142,467	3,821	13,403	311,133 ⁴
	1973 108	153,800	165,797	4,022	15,453	336,676 ⁴
Manitoba	1971 113	11,043	13,124	1,166	2,609	28,055
	1972 108	13,706	14,552	1,179	2,541	32,007 ⁴
	1973 82	14,616	17,183	1,122	3,087	35,859 ⁴
Saskatchewan	1971 470	9,233	10,669	2,504	3,141	26,017
	1972 448	8,528	12,243	2,432	2,854	26,495 ⁴
	1973 340	8,311	13,684	2,556	3,608	28,449 ⁴
Alberta	1971 468	24,544	22,287	2,844	5,724	55,867
	1972 419	25,918	23,268	2,943	5,682	58,065 ⁴
	1973 330	28,919	28,717	3,295	7,375	68,300 ⁴
British Columbia	1971 46	11,551	41,703	645	1,127	55,072
	1972 35	12,152	45,750	702	1,109	59,748
	1973 31	13,124	55,598	760	1,404	70,875 ⁴
Total	1971 1,549	391,332	329,232	15,369	36,284	758,807 ⁴
	1972 1,433	434,924	351,754	16,266	36,816	833,027 ⁴
	1973 1,107	446,885	410,786	17,057	43,398	911,508 ⁴

¹Used in farm butter only.²Represents the value of milk and cream sold off farms for fluid purposes.³Includes values of skim milk and buttermilk retained on farms.⁴Represents the market price less levies on manufacturing milk collected under provincial authority. Levies by category of milk are not available, therefore cash receipts are not additive.

11.12 Production of butter and cheese, by province, 1971-73 (thousand pounds)

Province and year		Butter				Cheese Factory ¹
		Creamery	Farm	Whey	Total	
Prince Edward Island	1971	3,918	24	64	4,006	2,119
	1972	3,448	24	12	3,484	2,607
	1973	2,799	10	55	2,864	2,293
Nova Scotia	1971	1,954	90	—	2,044	1,588
	1972	2,061	68	—	2,129	1,872
	1973	1,696	47	—	1,743	1,808
New Brunswick	1971	2,993	105	—	3,098	441
	1972	2,801	104	—	2,905	492
	1973	2,475	79	—	2,554	555
Quebec	1971	136,593	258	3,279	140,130	121,549
	1972	138,259	232	3,128	141,619	112,571
	1973	120,821	175	2,209	123,205	119,816
Ontario	1971	80,003	226	3,635	83,864	108,251
	1972	87,204	206	4,356	91,766	113,521
	1973	73,682	154	4,764	78,600	103,029
Manitoba	1971	13,723	179	—	13,902	5,824
	1972	13,020	168	—	13,188	9,532
	1973	12,006	124	—	12,130	9,753
Saskatchewan	1971	15,279	770	—	16,049	—
	1972	14,079	723	—	14,802	—
	1973	11,859	540	—	12,399	463
Alberta	1971	27,025	755	10	27,790	3,768
	1972	25,439	676	7	26,122	4,418
	1973	23,282	508	—	23,790	5,656
British Columbia	1971	5,142	76	—	5,218	2,524
	1972	4,287	56	—	4,343	2,617
	1973	3,652	48	—	3,700	2,533
Total	1971	286,630	2,483	6,988	296,101	248,030
	1972	290,598	2,257	7,503	300,358	249,456
	1973	252,272	1,685	7,028	260,985	248,270

¹Factory-made cheese includes cheddar and other cheese made from whole milk and cream. Amounts for other cheese are included in Quebec, Ontario and Alberta figures, but, as fewer than three firms reported in the other provinces, data cannot be included except in the Canada total.

11.13 Domestic disappearance of dairy products, 1971-73

Product	1971		1972		1973	
	Total '000 lb.	Per capita ¹ lb.	Total '000 lb.	Per capita ¹ lb.	Total '000 lb.	Per capita ¹ lb.
Milk and cream	5,723,656	271.62	5,842,540	274.10	5,929,960	274.74
Milk	4,882,376	231.70	5,002,938	234.71	5,093,971	236.01
Cream as milk	841,280	39.92	839,602	39.39	835,989	38.73
Butter	338,152	15.66	326,512	14.94	302,328	13.66
Creamery	328,623	15.22	316,759	14.50	293,794	13.28
Farm	2,483	0.11	2,257	0.10	1,685	0.07
Whey	7,046	0.33	7,496	0.34	6,849	0.31
Cheese	272,073	12.60	288,012	13.18	318,640	14.40
Cheddar	88,814	4.11	91,836	4.20	108,903	4.92
Process	102,230	4.74	113,798	5.21	121,926	5.51
Other	81,029	3.75	82,378	3.77	87,811	3.97
Concentrated whole milk products ²	291,309	13.49	281,299	12.87	275,315	12.44
Evaporated	255,339	11.82	244,546	11.19	231,768	10.48
Condensed	16,046	0.74	17,093	0.78	20,197	0.91
Powdered	1,718	0.08	1,720	0.08	2,854	0.13
Concentrated milk by-products ³	219,506	10.16	216,733	9.92	222,726	10.07
Evaporated	16,963	0.79	22,748	1.04	20,251	0.92
Condensed	1,660	0.08	1,700	0.08	2,472	0.11
Powdered	108,920	5.04	103,373	4.73	114,403	5.17
All dairy products in terms of milk						
Butter	7,747,880	358.78	7,464,975	341.68	6,914,209	312.51
Cheese	2,696,213	124.85	2,834,422	129.73	3,148,248	142.29
Concentrated	662,949	30.70	639,148	29.25	602,561	27.23
Total ⁴	17,679,691	825.26	17,670,255	815.46	17,498,704	797.62

¹Includes Newfoundland for all manufactured dairy products.

²Includes, in addition to the items listed, partly skimmed evaporated milk, whole milk powder or less than 26% fat, formula milks, evaporated milk of 2% fat, and concentrated liquid milk.

³Includes, in addition to the items listed, powdered buttermilk, sugar of milk, casein, powdered whey, special formula skim milk products and concentrated liquid skim milk. Since the quantities used for human consumption and livestock feeding cannot be separated, per capita figures include both.

⁴Includes ice cream mix in terms of milk.

11.14 Estimated commercial production and farm value of fruit, 1971-73

Kind of fruit and year	Quantity	Weight '000 lb.	Farm value \$'000	Kind of fruit and year	Quantity	Weight '000 lb.	Farm value \$'000
Apples	'000 bu			Peaches	'000 bu		
1971	20,532	862,344	26,590	1971	2,517	125,850	11,166
1972	20,618	865,956	37,164	1972	1,693	84,650	9,843
1973	19,881	835,002	..	1973	2,131	106,550	..
Apricots				Pears			
1971	133	6,650	443	1971	1,813	90,650	4,902
1972	126	6,300	496	1972	1,818	90,900	6,010
1973	142	7,100	..	1973	1,322	66,100	..
Cherries (sour)				Plums and prunes			
1971	438	21,900	2,865	1971	442	22,100	1,576
1972	362	18,100	1,933	1972	362	18,100	1,797
1973	224	11,200	..	1973	339	16,950	..
Cherries (sweet)				Raspberries	'000 qt		
1971	463	23,150	3,665	1971	8,875	12,822	3,667
1972	319	15,950	3,808	1972	9,182	13,334	4,914
1973	461	23,050	..	1973	8,749	12,820	..
Strawberries	'000 qt			Grapes	'000 lb.		
1971	34,092	44,898	9,469	1971	174,626	174,626	14,041
1972	21,721	28,502	7,613	1972	124,398	124,398	10,978
1973	24,156	31,606	..	1973	129,597	129,597	..
Loganberries	'000 lb.			Blueberries			
1971	855	855	184	1971	22,471	22,471	3,830
1972	680	680	163	1972	26,366	26,366	6,999
1973	690	690	..	1973	35,558	35,558	..

11.15 Estimated commercial acreage and production of vegetables, 1970-72, with average for 1965-69

Vegetable	Average 1965-69		1970		1971		1972	
	Area acres	Production '000 lb.	Area acres	Production '000 lb.	Area acres	Production '000 lb.	Area acres	Production '000 lb.
Asparagus	3,420	5,328	3,160	5,890	3,140	5,694	3,590	5,900
Beans	24,770	98,571	24,450	100,712	22,330	100,016	21,950	75,903
Beets	2,710	46,753	3,070	50,290	2,330	44,424	21,000	33,778
Cabbage	6,950	140,238	7,220	153,668	8,090	170,979	8,280	150,198
Carrots	15,090	371,971	18,410	464,529	14,690	329,835	15,590	328,523
Cauliflower	3,440	36,924	4,220	47,317	3,240	36,178	3,400	31,811
Celery	1,070	39,854	1,110	45,445	1,080	46,641	1,060	42,537
Corn	58,050	432,896	62,260	460,830	66,160	513,060	62,780	498,475
Cucumbers	10,720	102,308	11,080	150,638	9,410	128,256	8,670	98,716
Lettuce	4,940	55,574	5,000	60,043	5,230	73,694	5,320	54,306
Onions	9,710	243,362	10,200	254,952	9,000	232,443	8,900	186,567
Parsnips	560	11,035	520	8,152	670	11,075	510	7,580
Peas	54,270	141,750	49,530	133,084	46,630	123,080	46,520	114,524
Rutabagas	9,000	223,096	8,630	216,093	6,840	164,880	6,570	161,328
Spinach	1,010	8,965	950	7,407	730	5,607	1,070	7,409
Tomatoes	31,370	747,843	28,620	838,065	27,780	830,747	26,950	726,262

11.16 Honey production, by province, and total value, 1970-73 with average for 1965-69

Province	Average 1965-69	1970	1971	1972	1973
Prince Edward Island	'000 lb. 43	28	33	56	77
Nova Scotia	" 228	201	235	342	347
New Brunswick	" 113	129	190	148	196
Quebec	" 2,923	2,548	2,540	1,590	4,836
Ontario	" 8,796	7,636	7,245	6,708	9,203
Manitoba	" 7,509	9,300	7,500	9,476	8,372
Saskatchewan	" 6,661	7,611	7,998	8,554	6,605
Alberta	" 16,224	20,240	22,540	20,150	21,605
British Columbia	" 2,708	3,348	3,735	3,575	3,402
Total production	'000 lb. 45,205	51,041	52,016	50,599	54,643
Total value	\$'000 7,900	8,269	10,821	15,623	26,739

11.17 Acreage, yield and value of sugar beets and quantity and value of beet sugar shipments, 1969-73

Year	Sugar beets			Average price per ton \$	Total farm value \$'000	Beet sugar (all types)	
	Harvested area acres	Yield per acre tons	Total yield tons			Shipments '000 lb.	Value \$'000
1969	79,227	13.61	1,078,221	17.59	18,970	242,819	20,480
1970	68,771	13.33	916,906	16.13	14,789	253,161	23,320
1971	81,096	14.99	1,215,917	18.27	22,215	244,371	24,902
1972	77,610	13.78	1,069,744	19.81	21,193	274,151	30,859
1973	69,031	14.40	993,925	..	..	..	..

11.18 Production and value of maple sugar and maple syrup, by province, 1970-73, with average for 1965-69

Province and year	Maple sugar		Maple syrup			Total value, sugar and syrup \$
	Quantity lb.	Value \$	Quantity gal	Average price per gal \$	Value \$	
Nova Scotia						
Av. 1965-69	8,508	6,800	4,466	7.08	31,600	38,400
1970	13,827	12,000	4,777	8.16	39,000	51,000
1971	16,200	16,000	4,548	7.92	36,000	52,000
1972	20,288	20,000	5,009	8.58	43,000	63,000
1973	9,579	..	3,266	..	..	..
New Brunswick						
Av. 1965-69	29,054	25,600	9,612	6.62	63,600	89,200
1970	28,297	29,000	7,860	7.25	57,000	86,000
1971	15,736	15,000	7,634	7.86	60,000	75,000
1972	24,516	25,000	13,121	8.92	117,000	142,000
1973	11,412	..	5,749	..	..	..
Quebec						
Av. 1965-69	392,400	238,200	2,198,200	4.22	9,271,000	9,509,200
1970	302,000	205,000	1,436,000	4.77	6,850,000	7,055,000
1971	241,000	183,000	1,164,000	5.60	6,518,000	6,701,000
1972	281,000	244,000	1,788,000	6.80	12,158,000	12,402,000
1973	275,000	..	2,287,000	..	..	..
Ontario						
Av. 1965-69	12,271	11,800	228,365	6.09	1,391,600	1,403,400
1970	17,475	20,000	181,947	6.83	1,243,000	1,263,000
1971	14,658	18,000	147,625	7.18	1,060,000	1,078,000
1972	14,049	19,000	180,291	7.70	1,388,000	1,407,000
1973	12,142	..	124,455	..	..	..
Total						
Av. 1965-69	442,233	282,400	2,440,643	4.41	10,757,800	11,040,200
1970	361,599	266,000	1,630,584	5.02	8,189,000	8,455,000
1971	287,594	232,000	1,323,807	5.80	7,674,000	7,906,000
1972	339,853	308,000	1,986,421	6.90	13,706,000	14,014,000
1973	308,133	..	2,420,470	..	..	..

11.19 Production, and value of farm eggs, by province, 1972 and 1973

Province	1972				1973			
	Average number of layers '000	Average production per 100 layers No.	Net eggs laid ¹ '000 doz	Total value (sold and used) \$'000	Average number of layers '000	Average production per 100 layers No.	Net eggs laid ¹ '000 doz	Total value (sold and used) \$'000
Newfoundland	465	21,888	8,481	4,207	390	21,042	6,835	4,737
Prince Edward Island	144	19,581	2,350	991	141	20,508	2,410	1,453
Nova Scotia	968	21,534	17,373	6,544	998	21,926	18,228	10,770
New Brunswick	542	22,017	9,932	4,663	542	22,927	10,365	6,984
Quebec	3,657	21,179	64,490	25,551	3,476	20,561	59,518	34,629
Ontario	10,544	21,772	191,091	67,089	10,439	21,937	190,718	105,904
Manitoba	3,000	20,840	52,068	15,442	2,924	21,724	52,893	26,029
Saskatchewan	1,425	20,162	23,931	8,530	1,318	20,427	22,444	10,587
Alberta	2,522	19,665	41,315	16,344	2,460	20,218	41,437	22,056
British Columbia	3,047	22,605	57,324	24,521	3,076	22,186	56,872	32,158
Total	26,315	21,016	468,355	173,882	25,765	21,515	461,720	255,307

¹Total laid less loss.**11.20 Acreage, production and value of the commercial crop of leaf tobacco, by province, 1971-73**

Year	Quebec			Ontario			Other provinces		
	Harvested area acres	Production '000 lb.	Value \$'000	Harvested area acres	Production '000 lb.	Value \$'000	Harvested area acres	Production '000 lb.	Value \$'000
1971	10,057	14,980	8,157	82,626	204,624	132,579	4,856	4,808	3,029
1972	9,592	9,191	6,288	88,566	170,805	132,118	5,125	6,840	4,487
1973	9,393	14,387	10,538	106,314	236,240	186,789	5,160	6,686	5,312

11.21 Acreage, production and value of the commercial crop of leaf tobacco, by main type, 1971-73

Type of tobacco and year		Harvested area <i>acres</i>	Average yield per acre <i>lb.</i>	Total production <i>'000 lb.</i>	Average farm price per lb. ¢	Gross farm value \$ <i>'000</i>
Flue-cured	1971	93,233	2,330	217,262	64.8	140,850
	1972	98,979	1,828	180,958	77.5	140,171
	1973	117,295	2,142	251,204	79.3	199,317
Burley	1971	921	2,242	2,065	50.3	1,038
	1972	1,412	2,225	3,142	51.1	1,605
	1973	1,220	2,187	2,668	56.9	1,520
Cigar leaf	1971	2,550	1,500	3,825	34.0	1,300
	1972	2,107	773	1,630	35.0	570
	1973	1,727	1,405	2,427	51.1	1,239

11.21 Acreage, production and value of the commercial crop of leaf tobacco, by main type, 1971-73 (concluded)

Type of tobacco and year	Harvested area acres	Average yield per acre lb.	Total production '000 lb.	Average farm price per lb. ¢	Gross farm value \$'000
Total ¹	1971 97,539	2,301	224,412	64.1	143,765
	1972 103,283	1,809	186,836	76.5	142,893
	1973 120,867	2,129	257,313	78.8	202,639

¹Includes other types not specified.**11.22 Average index¹ numbers of farm prices of agricultural products, by province, 1969-73 (1961 = 100)**

Province	1969	1970	1971	1972	1973
Prince Edward Island	123.6	149.2	131.7	153.3	266.7
Nova Scotia	122.7	123.4	121.1	132.9	177.2
New Brunswick	116.8	135.5	122.9	140.5	227.9
Quebec	131.0	129.0	134.2	154.7	198.4
Ontario	130.7	128.4	128.6	143.4	186.4
Manitoba	104.4	103.0	100.5	119.7	177.9
Saskatchewan	96.3	97.3	94.4	112.0	172.4
Alberta	112.5	110.7	109.0	129.6	186.8
British Columbia	124.6	121.6	123.7	134.9	167.4
Total	116.8	116.0	115.4	132.9	184.5

¹A description of this index, its coverage and the methods used will be found in Statistics Canada *Quarterly bulletin of agricultural statistics* (Cat. No. 21-003) for July-September 1969.**11.23 Average cash prices a bushel of major Canadian grains, crop years ended July 31, 1969-73 (basis, in store Thunder Bay)**

Year	Averages in cents and eighths a bushel				
	Wheat ^{1,2} No. 1 N.	1 C.W. Red Spring 14%	Oats ¹ No. 2 C.W.	Barley ¹ No. 3 C.W. - 6 row	Rye ³ No. 2 C.W.
1969	194/7	...	85/4	119/6	124/3
1970	180/7	...	73/2	112/2	108/3
1971	179/2	...	83/2	130/7	109/3
1972	...	168/4	67/2	113/7	98/6
1973	...	262/5	199/2	176/5	158/5

¹Canadian Wheat Board daily fixed prices.²International Grains Arrangement, effective July 1, 1968; International Wheat Agreement effective July 1, 1971.³Winnipeg Commodity Exchange daily closing cash quotations.**11.24 Yearly average prices per 100 lb. of Canadian livestock at principal markets, 1969-72 (dollars)**

Item	1969	1970	1971	1972	1969	1970	1971	1972
	Toronto				Montreal			
Steers, good	29.35	30.40	32.70	35.61	29.65	30.75	32.23	35.37
Steers, medium	27.61	28.55	30.34	33.63	27.85	28.70	30.33	33.45
Steers, common	24.87	25.99	26.76	30.41	25.15	25.41	26.23	29.91
Heifers, good	27.32	28.60	30.15	33.12	25.65	25.70	25.61	28.56
Heifers, medium	25.76	26.69	28.04	31.08	23.75	24.18	24.02	26.79
Cows, good	22.75	23.05	22.75	26.59	22.80	23.25	23.24	26.76
Cows, medium	21.07	21.47	21.47	25.05	20.10	20.64	20.58	23.99
Bulls	23.87	24.56	23.58	27.12	24.50	25.26	24.79	29.72
Feeder steers, good	31.60	33.95	34.15	39.77	1	1	35.00	1
Feeder steers, common	26.66	27.80	29.17	35.11	1	1	1	1
Calves, veal, good and choice	38.05	40.00	40.05	45.35	42.90	43.20	44.55	53.16
Calves, veal, common and medium	28.68	29.00	29.34	33.17	32.75	34.06	33.76	39.42
Pigs, grade B, dressed	35.70 ^a	32.20 ^a	25.80 ^a	37.39 ^a	33.90 ^a	33.12 ^a	1	1
Lambs, good	32.80	33.65	30.65	34.73	29.30	28.80	30.55	30.62
Lambs, common	28.52	30.57	25.13	28.44	22.70	23.12	24.99	22.10
Sheep, good	14.26	14.40	14.07	14.17	14.50	13.23	13.80	12.66
	Winnipeg				Edmonton			
Steers, good	29.10	30.20	32.40	35.07	27.65	29.20	31.15	33.41
Steers, medium	27.83	29.02	29.94	33.85	26.52	27.92	28.34	31.34
Steers, common	26.01	27.48	27.10	31.22	25.31	26.61	27.05	29.81
Heifers, good	25.50	28.09	28.90	32.13	26.00	27.20	28.39	31.71
Heifers, medium	27.38	27.06	27.35	30.46	24.47	26.06	26.99	30.06
Cows, good	23.95	23.45	23.10	26.47	21.15	21.20	21.00	24.82
Cows, medium	22.12	21.89	21.70	24.90	19.76	19.82	20.06	23.73
Bulls	24.71	25.20	25.00	29.21	22.82	24.27	23.85	26.44
Feeder steers, good	32.00	33.00	33.75	38.81	31.50	33.20	33.55	38.60
Feeder steers, common	27.58	28.71	29.20	33.65	26.74	29.34	29.48	33.44
Feeder cows and heifers, good	26.87	28.04	28.43	32.92	27.12	29.42	29.49	33.62
Feeder cows and heifers, common	23.84	24.26	24.23	27.97	24.04	24.52	24.68	29.29
Calves, veal, good and choice	42.05	46.70	47.10	53.35	39.65	43.05	44.00	47.50
Calves, veal, common and medium	32.70	37.44	36.81	40.35	27.62	28.64	28.98	32.20
Pigs, grade B, dressed	35.45 ^a	29.20 ^a	22.85 ^a	34.00 ^a	33.30 ^a	28.40 ^a	21.25 ^a	32.01 ^a
Lambs, good	30.75	28.65	27.15	30.17	26.10	25.29	23.70	25.79
Lambs, common	23.45	24.22	21.80	24.73	22.15	22.21	20.59	23.00
Sheep, good	7.91	9.51	8.76	7.65	8.49	11.25	10.66	11.30

^aNo sales reported.^aPigs, Index 100, base price.

11.25 Per capita supplies of food moving into consumption 1971 and 1972, with average for 1966-70

Kind of food and weight base		Pounds per capita per annum			Percentages of 1966-70 average	
		Average 1966-70	1971	1972	1971	1972
CEREALS	<i>retail wt</i>	151.0	145.7	152.7	96.5	101.1
Wheat flour	"	130.9	124.0	130.9	94.7	100.0
Rye flour and meal	"	0.8	0.8	0.9	100.0	112.5
Oatmeal and rolled oats	"	4.1	3.8	3.8	92.7	92.7
Pot and pearl barley	"	0.1	0.1	0.1	100.0	100.0
Corn flour and meal	"	3.9	4.0	4.7	102.6	120.5
Buckwheat flour	"	--	--	--	--	--
Rice	"	4.5	6.8	6.2	151.1	137.8
Breakfast food	"	6.7	6.2	6.2	92.5	92.5
SUGARS AND SYRUPS	<i>sugar content</i>	109.9	110.6	110.2	100.6	100.3
Sugar	<i>retail wt</i>	102.4	104.2	102.4	101.8	100.0
Maple sugar	"	0.5	0.2	0.5	40.0	100.0
Honey	"	1.9	1.6	1.7	84.2	89.5
Other	"	9.0	8.1	9.6	90.0	106.7
PULSES AND NUTS	<i>retail wt</i>	10.0	14.0	14.2	140.0	142.0
Dry beans	"	3.5	4.6	4.9	131.4	140.0
Dry peas	"	1.4	2.6	2.0	185.7	142.9
Peanuts	"	3.8	5.2	5.3	136.8	139.5
Tree nuts	"	1.3	1.6	2.0	123.1	153.8
OILS AND FATS	<i>fat content</i>	41.0	41.1	43.3	100.2	105.6
Margarine	<i>retail wt</i>	9.3	9.2	9.7	98.9	104.3
Shortening and shortening oils	"	14.2	15.1	16.6	106.3	116.9
Salad oils	"	5.9	5.9	6.7	100.0	113.6
Butter	"	16.5	15.7	15.0	95.2	90.9
FRUIT	<i>fresh equiv.</i>	247.0	253.4	247.1	102.6	100.0
Fresh	<i>retail wt</i>	111.5	115.4	109.3	103.5	98.0
Canned	<i>net wt canned</i>	32.9	33.3	32.5	101.2	98.8
Frozen	<i>retail wt</i>	3.1	3.1	3.1	100.0	100.0
Juice	<i>net wt canned</i>	33.9	35.4	35.0	104.4	103.2
Tomatoes, fresh	<i>retail wt</i>	11.1	12.1	12.1	109.0	109.0
canned	<i>net wt canned</i>	5.3	6.0	6.1	113.2	115.1
Tomato juice	"	8.6	8.5	7.8	98.8	90.7
pulp, paste and purée	"	2.2	2.2	2.2	100.0	100.0
ketchup	"	4.0	4.1	4.4	102.5	110.0
Citrus fruit, fresh	<i>retail wt</i>	26.0	26.2	26.8	100.8	103.1
juice	<i>net wt canned</i>	13.4	16.6	17.6	123.9	131.3
Apples, fresh	<i>retail wt</i>	26.1	26.0	22.5	99.6	86.2
canned	<i>net wt canned</i>	0.4	0.4	0.2	100.0	50.0
juice	"	6.8	6.1	5.5	89.7	80.9
frozen	<i>retail wt</i>	0.4	0.2	0.4	50.0	100.0
sauce	<i>net wt canned</i>	1.3	1.2	1.3	92.3	100.0
pie filling	"	0.5	0.5	0.5	100.0	100.0
Apricots, fresh	<i>retail wt</i>	0.3	0.3	0.2	100.0	66.7
canned	<i>net wt canned</i>	0.6	0.5	0.5	83.3	83.3
Bananas, fresh	<i>retail wt</i>	17.1	18.1	17.9	105.8	104.7
Blueberries, fresh	"	--	0.3	0.6	--	--
canned	<i>net wt canned</i>	--	0.1	--	--	--
frozen	<i>retail wt</i>	--	0.1	--	--	--
Cherries, fresh	"	0.9	1.2	1.0	133.3	111.1
canned	<i>net wt canned</i>	0.3	0.3	0.2	100.0	66.7
frozen	<i>retail wt</i>	0.6	0.6	0.7	100.0	116.7
Cranberries, fresh	"	0.3	0.6	0.5	200.0	166.7
Melons, fresh	"	6.9	7.1	7.1	102.9	102.9
Peaches, fresh	"	4.8	6.0	4.7	125.0	97.9
canned	<i>net wt canned</i>	3.6	3.7	3.4	102.8	94.4
frozen	<i>retail wt</i>	--	--	--	--	--
Pears, fresh	"	3.0	3.3	3.8	110.0	126.7
canned	<i>net wt canned</i>	1.7	1.9	1.8	111.8	105.9
Pineapples, fresh	<i>retail wt</i>	0.2	0.3	0.3	150.0	150.0
canned	<i>net wt canned</i>	2.2	2.9	2.5	131.8	113.6
juice	"	1.1	0.8	0.9	72.7	81.8
Plums, etc. fresh	<i>retail wt</i>	1.7	1.8	1.7	105.9	100.0
canned	<i>net wt canned</i>	0.4	0.3	0.3	75.0	75.0
Raspberries, fresh	<i>retail wt</i>	--	0.1	--	--	--
canned	<i>net wt canned</i>	0.2	0.1	0.1	50.0	50.0
frozen	<i>retail wt</i>	0.5	0.5	0.4	100.0	80.0
Strawberries, fresh	"	1.6	1.8	1.7	112.5	106.3
canned	<i>net wt canned</i>	0.2	0.1	0.1	50.0	50.0
frozen	<i>retail wt</i>	1.4	1.5	1.4	107.1	100.0
Grapes, fresh	"	10.1	10.4	8.5	103.0	84.2
Unspecified, fresh	"	1.4	--	--	--	--
canned	<i>net wt canned</i>	4.5	4.1	4.1	91.1	91.1
frozen	<i>retail wt</i>	0.2	0.1	0.2	50.0	100.0
juice	<i>net wt canned</i>	4.0	3.5	3.3	87.5	82.5
jams, jellies, marmalade	<i>processed wt</i>	5.5	5.0	4.9	90.9	89.1
VEGETABLES¹	<i>fresh equiv.</i>	116.0	114.6	109.0	98.8	94.0
Fresh	<i>retail wt</i>	74.3	69.8	64.2	93.9	86.4
Canned	<i>net wt canned</i>	18.3	19.3	18.3	105.5	100.0
Frozen	<i>retail wt</i>	5.5	5.8	6.0	105.5	109.1
Cabbage, fresh	"	9.0	10.1	9.5	112.2	105.6
Lettuce	"	10.3	11.2	11.2	108.7	108.7
Spinach, fresh	"	0.5	0.5	0.6	100.0	120.0
Carrots, fresh	"	16.6	13.1	12.4	78.9	74.7
canned	<i>net wt canned</i>	1.0	1.0	1.0	100.0	100.0
frozen	<i>retail wt</i>	0.3	0.6	0.7	200.0	233.3

11.25 Per capita supplies of food moving into consumption 1971 and 1972, with average for 1966-70 (concluded)

Kind of food and weight base		Pounds per capita per annum			Percentages of 1966-70 average	
		Average 1966-70	1971	1972	1971	1972
VEGETABLES ¹ (concluded)						
Beans, fresh	retail wt	0.8	0.9	1.0	112.5	125.0
canned	net wt canned	3.7	4.0	3.5	108.1	94.6
frozen	retail wt	0.7	0.9	0.8	128.6	114.3
Peas, fresh		0.3	0.4	0.4	133.3	133.3
canned	net wt canned	5.5	5.0	5.0	90.9	90.9
frozen	retail wt	2.6	2.3	2.4	88.5	92.3
Beets, fresh	"	1.0	0.8	0.3	80.0	30.0
canned	net wt canned	0.7	0.8	0.8	114.3	114.3
Cauliflower, fresh	retail wt	1.9	1.7	1.7	89.5	89.5
Celery, fresh	"	6.4	7.0	6.4	109.4	100.0
Corn, fresh	"	4.0	3.5	"	87.5	"
canned	net wt canned	5.0	4.9	4.9	98.0	98.0
frozen	retail wt	0.8	0.8	0.9	100.0	112.5
Cucumbers, fresh	"	2.8	2.7	1.7	96.4	60.7
Onions, not processed	"	12.8	12.3	11.5	96.1	89.8
Asparagus, fresh	"	0.3	0.4	0.5	133.3	166.7
canned	net wt canned	0.4	0.5	0.5	125.0	125.0
frozen	retail wt	--	--	--	--	--
Rutabagas, fresh	"	5.9	3.2	3.4	54.2	57.6
Broccoli, fresh	"	"	0.6	0.7	"	"
frozen	"	"	0.2	0.3	"	"
Brussels sprouts, fresh	"	"	"	"	"	"
frozen	"	"	0.2	0.2	"	"
Unspecified, fresh	"	1.7	1.4	3.0	82.4	176.5
canned	net wt canned	2.0	3.2	2.5	160.0	125.0
frozen	retail wt	1.1	0.9	0.8	81.8	72.7
MUSHROOMS						
Fresh	fresh equiv.	1.7	2.9	4.1	170.6	241.2
Canned	retail wt	0.5	0.8	1.0	160.0	200.0
	net wt canned	0.8	1.5	2.1	187.5	262.5
POTATOES						
White	fresh equiv.	166.1	151.5	163.2	91.2	98.3
Sweet	"	165.7	151.1	162.7	91.2	98.2
	"	0.4	0.4	0.5	100.0	125.0
MEAT						
Pork	carcass wt	156.0	165.4	165.7	106.0	106.2
Beef	"	52.8	66.2	61.0	125.4	115.5
Veal	"	85.1	87.3	92.5	102.6	108.7
Mutton and lamb	"	6.0	4.4	3.5	73.3	58.3
Offal	"	3.8	3.3	4.7	86.8	123.7
Canned meat ²	net wt canned	3.7	4.3	4.1	116.2	110.8
	"	6.7	0.9	1.1	"	"
EGGS						
	fresh equiv.	32.0	32.0	30.7	100.0	95.9
POULTRY ³						
Chicken	eviscerated wt	41.5	44.5	45.5	107.2	109.6
Fowl	"	26.8	29.9	31.4	111.6	117.2
Turkey	"	4.1	3.7	3.1	90.2	75.6
Duck	"	10.1	10.4	10.4	103.0	103.0
Goose	"	0.3	0.4	0.4	133.3	133.3
	"	0.2	0.2	0.2	100.0	100.0
FISH						
Fish and shellfish, fresh and frozen ⁴	edible wt	12.6	11.4	13.5	90.5	107.1
Fish, cured (smoked, salted, pickled)	"	8.2	6.7	7.3	81.7	89.0
Fish and shellfish, canned	"	0.9	0.8	1.0	88.9	111.1
	"	3.5	3.9	5.2	111.4	148.6
MILK AND CHEESE						
Cheddar cheese	milk solids	60.1	58.0	56.8	96.5	94.5
Process cheese	retail wt	3.4	4.1	4.3	120.6	126.5
Other cheese	"	4.3	4.7	5.2	109.3	120.9
Cottage cheese	"	2.7	3.8	3.8	140.7	140.7
Evaporated whole milk	"	1.7	2.2	2.3	129.4	135.3
Condensed whole milk	"	14.2	12.5	11.9	88.0	83.8
Powdered whole milk and cream	"	1.1	0.7	0.8	63.6	72.7
Miscellaneous milk products ⁵	"	0.2	0.1	0.1	50.0	50.0
Powdered skim milk ⁶	"	0.3	0.2	0.2	66.7	66.7
buttermilk	"	7.8	5.0	4.7	64.1	60.3
whey	"	0.5	0.4	0.3	80.0	60.0
Miscellaneous by-products ⁷	"	2.0	2.6	2.7	130.0	135.0
Fluid whole milk ⁸	"	1.8	1.8	1.9	100.0	105.6
Milk in ice cream	"	296.8	279.2	268.9	94.1	90.6
	"	6.1	39.3	40.7	108.9	112.7
BEVERAGES						
Tea	tea leaf equiv.	2.4	2.4	2.4	100.0	100.0
Coffee	green beans	9.1	9.0	9.1	98.9	100.0
Cocoa	"	3.3	3.7	3.9	112.1	118.2

¹Includes pickles, relishes, vegetables used in soups, etc.²Per capita consumption not comparable with previous years.³Excludes Newfoundland.⁴Excludes herring, fresh and frozen, and all fish used for bait.⁵Includes formula milk, concentrated liquid milk and malted milk.⁶Part of this product is used for animal feeds.⁷Includes evaporated and condensed skim milk, condensed buttermilk, sugar of milk, formula skim milk products and concentrated liquid skim milk.⁸Includes cream expressed as milk.

11.26 Supply, distribution and disappearance of meats, 1970-73

Item		1970 ¹	1971 ¹	1972	1973
BEEF					
Animals slaughtered	'000	3,164.6	3,372.9	3,392.7	3,411.7
Estimated dressed weight	'000 lb.	1,774,312	1,877,575	1,898,328	1,910,575
On hand, Jan. 1	"	39,944	43,473	35,366	41,776
Imports for consumption	"	170,274	153,158	213,661	218,957
Total supply	"	1,984,530	2,074,206	2,147,355	2,171,308
Exports	"	118,723	113,635	83,829	88,241
Used for canning	"	22,392	—	—	—
On hand, Dec. 31	"	43,473	35,366	41,776	52,702
Domestic disappearance	"	1,799,942	1,925,205	2,021,750	2,030,365
Per capita disappearance	lb.	84.4	89.2	92.5	91.8
VEAL					
Animals slaughtered	'000	856.7	838.2	644.6	482.2
Estimated dressed weight	'000 lb.	100,985	98,516	80,525	65,857
On hand, Jan. 1	"	4,172	5,316	3,367	8,230
Imports for consumption	"	—	—	—	—
Total supply	"	105,157	103,832	83,892	74,087
Exports	"	—	—	—	—
Used for canning	"	991	—	—	—
On hand, Dec. 31	"	5,316	3,367	8,230	4,411
Domestic disappearance	"	98,850	100,465	75,662	69,676
Per capita disappearance	lb.	4.6	4.7	3.5	3.1
MUTTON AND LAMB					
Animals slaughtered	'000	378.5	422.8	446.3	501.1
Estimated dressed weight	'000 lb.	16,532	18,189	19,850	21,893
On hand, Jan. 1	"	13,077	11,260	11,068	9,103
Imports for consumption	"	63,669	52,765	80,548	58,410
Total supply	"	93,278	82,214	111,466	89,406
Exports	"	635	93	676	156
Used for canning	"	970	—	—	—
On hand, Dec. 31	"	11,260	11,068	9,103	7,067
Domestic disappearance	"	80,413	71,053	101,687	82,183
Per capita disappearance	lb.	3.8	3.3	4.7	3.7
PORK					
Animals slaughtered	'000	10,351.0	11,904.0	10,564.7	10,398.8
Estimated dressed weight ²	'000 lb.	1,362,007	1,557,254	1,392,607	1,360,418
On hand, Jan. 1	"	24,467	26,878	28,969	18,803
Imports for consumption	"	26,295	16,954	44,983	54,131
Total supply	"	1,412,769	1,601,086	1,466,559	1,433,352
Exports	"	71,287	97,166	115,517	125,614
Used for canning	"	61,890	—	—	—
On hand, Dec. 31	"	26,878	28,969	18,803	33,051
Domestic disappearance	"	1,252,714	1,474,951	1,332,239	1,274,687
Per capita disappearance	lb.	58.7	68.3	61.0	57.6
OFFAL					
Estimated production	'000 lb.	121,666	133,398	127,023	125,461
On hand, Jan. 1	"	7,598	8,061	9,036	7,390
Imports for consumption	"	6,945	8,934	10,948	8,934
Total supply	"	136,209	150,393	147,007	141,785
Exports	"	52,908	45,460	50,876	51,820
Used for canning	"	—	—	—	—
On hand, Dec. 31	"	8,061	9,036	7,390	9,983
Domestic disappearance	"	75,240	95,897	88,741	79,982
Per capita disappearance	lb.	3.5	4.4	4.1	3.6

¹Inter-censal revisions.²Included with beef.³Trimmed of larding fat.

11.27 Number of census-farms, by province, Censuses 1966 and 1971

Province or territory	1966	1971
Newfoundland	1,709	1,042
Prince Edward Island	6,357	4,543
Nova Scotia	9,621	6,008
New Brunswick	8,706	5,485
Quebec	80,294	61,257
Ontario	109,887	94,722
Manitoba	39,747	34,981
Saskatchewan	85,686	76,970
Alberta	69,411	62,702
British Columbia	19,085	18,400
Yukon Territory and Northwest Territories	19	18
Canada	430,522	366,128

11.28 Use of agricultural land, by province, Censuses 1966 and 1971 (acres)

Land use	Province or territory					
	Newfoundland		Prince Edward Island		Nova Scotia	
	1966	1971	1966	1971	1966	1971
Improved land	20,566	19,148	569,799	494,131	485,859	386,021
Under crops ¹	12,409	8,736	398,373	351,384	314,143	242,959
Pasture (improved)	5,320	7,881	152,191	114,271	132,355	107,390
Summerfallow	258	499	2,896	9,186	2,587	6,272
Other	2,579	2,032	16,339	19,290	36,774	29,400
Unimproved land	28,947	43,556	357,179	280,499	1,366,036	942,854
Woodland	13,750	11,338	279,681	210,911	1,084,273	740,338
Other	15,197	32,218	77,498	69,588	281,763	202,516
Total	49,513	62,704	926,978	774,630	1,851,895	1,328,875
	New Brunswick		Quebec		Ontario	
	1966	1971	1966	1971	1966	1971
Improved land	638,649	487,380	7,629,346	6,449,992	12,004,305	10,864,601
Under crops ¹	427,832	322,310	5,166,421	4,337,236	8,358,741	7,855,890
Pasture (improved)	166,835	114,836	2,121,141	1,712,106	2,935,693	2,336,446
Summerfallow	5,822	8,594	48,779	81,672	229,852	237,916
Other	38,160	41,640	293,005	318,978	480,019	434,349
Unimproved land	1,173,046	851,753	5,256,723	4,351,124	5,821,740	5,098,455
Woodland	973,888	682,237	3,777,489	3,098,920	2,834,417	2,300,621
Other	199,158	169,516	1,479,234	1,252,204	2,987,323	2,797,834
Total	1,811,695	1,339,133	12,886,069	10,801,116	17,826,045	15,963,056
	Manitoba		Saskatchewan		Alberta	
	1966	1971	1966	1971	1966	1971
Improved land	12,446,065	12,803,988	45,468,776	46,426,487	27,276,251	28,460,328
Under crops ¹	8,693,682	9,122,474	27,018,238	27,339,147	17,707,659	18,092,544
Pasture (improved)	770,519	730,499	1,909,653	1,958,192	2,310,945	2,744,940
Summerfallow	2,668,830	2,655,197	15,895,825	16,559,825	6,659,125	7,008,714
Other	313,034	295,818	645,060	569,323	598,522	614,130
Unimproved land	6,637,752	6,204,271	19,940,587	18,630,388	21,706,624	21,045,959
Woodland	1,212,959	960,183	1,347,741	999,180	1,859,257	1,666,085
Other	5,424,793	5,244,088	18,592,846	17,631,208	19,847,367	19,379,874
Total	19,083,817	19,008,259	65,409,363	65,056,875	48,982,875	49,506,287
	British Columbia		Yukon Territory and Northwest Territories		Canada	
	1966	1971	1966	1971	1966	1971
Improved land	1,614,141	1,755,247	620	1,554	108,154,377	108,148,877
Under crops ¹	955,287	1,092,593	219	405	69,053,004	68,765,678
Pasture (improved)	436,920	397,864	168	1,039	10,941,740	10,225,464
Summerfallow	117,684	172,816	25	36	25,631,683	26,740,727
Other	104,250	91,974	208	74	2,527,950	2,417,008
Unimproved land	3,678,169	4,067,984	3,648	2,894	65,970,451	61,519,737
Woodland	799,935	844,257	534	101	14,183,924	11,514,171
Other	2,878,234	3,223,727	3,114	2,793	51,786,527	50,005,566
Total	5,292,310	5,823,231	4,268	4,448	174,124,828	169,668,614

¹Includes field, vegetable, fruit and nursery crop land.

11.29 Economic classification of census-farms, by province, Censuses 1966 and 1971 (number)

Economic class	Province or territory					
	Newfoundland		Prince Edward Island		Nova Scotia	
	1966	1971	1966	1971	1966	1971
Value of products sold of						
\$50,000 or over	33	24	97	115	159	213
35,000-\$49,999		11		88		122
25,000- 34,999	19	33	74	133	91	161
15,000- 24,999	38	38	225	288	262	383
10,000- 14,999	31	38	385	385	399	321
7,500- 9,999	30	20	407	347	322	242
5,000- 7,499	47	37	744	562	525	379
3,750- 4,999	38	28	600	359	445	297
2,500- 3,749	65	53	796	503	664	450
1,200- 2,499	131	95	1,127	674	1,410	946
250- 1,199	541	301	1,274	721	3,149	1,619
50- 249	731	339	619	360	2,167	855
Institutional farms, etc.	5	25	9	8	28	20
Total	1,709	1,042	6,357	4,543	9,621	6,008
	New Brunswick		Quebec		Ontario	
	1966	1971	1966	1971	1966	1971
Value of products sold of						
\$50,000 or over	167	138	799	902	4,385	4,603
35,000-\$49,999		132		837		4,041
25,000- 34,999	118	180	643	1,625	3,733	5,698

11.29 Economic classification of census-farms, by province, Censuses 1966 and 1971 (number) (concluded)

Economic class	Province or territory					
	New Brunswick		Quebec		Ontario	
	1966	1971	1966	1971	1966	1971
\$15,000- 24,999	315	344	2,345	5,094	9,692	11,532
10,000- 14,999	334	366	4,156	6,898	11,522	9,950
7,500- 9,999	346	258	4,761	5,681	9,210	7,111
5,000- 7,499	532	399	9,644	8,576	13,173	9,416
3,750- 4,999	424	293	8,105	5,175	8,489	5,898
2,500- 3,749	702	493	11,508	6,144	10,520	7,418
1,200- 2,499	1,464	865	15,651	7,172	14,377	9,894
250- 1,199	2,588	1,251	14,120	7,597	14,410	10,874
50- 249	1,699	748	8,414	5,453	10,294	8,203
Institutional farms, etc.	17	18	148	103	82	84
Total	8,706	5,485	80,294	61,257	109,887	94,722
	Manitoba		Saskatchewan		Alberta	
	1966	1971	1966	1971	1966	1971
Value of products sold of						
\$50,000 or over	630	606	1,093	737	2,195	2,236
35,000-\$49,999	585	926	1,789	1,919	1,876	2,657
25,000- 34,999	2,556	3,138	8,571	7,556	5,909	7,292
15,000- 24,999	4,452	4,263	13,610	11,496	8,012	8,007
10,000- 14,999	4,238	3,751	11,496	10,061	6,987	6,167
7,500- 9,999	6,409	5,233	15,570	13,779	10,130	8,079
5,000- 7,499	3,933	3,285	8,614	7,965	6,328	4,821
3,750- 4,999	4,569	3,603	9,219	8,522	7,534	5,477
2,500- 3,749	5,760	4,212	9,149	8,122	9,362	6,494
1,200- 2,499	4,235	3,341	4,278	4,009	6,599	5,674
250- 1,199	2,341	2,055	2,042	1,642	4,318	3,823
50- 249	39	37	255	267	161	178
Institutional farms, etc.						
Total	39,747	34,981	85,686	76,970	69,411	62,702
	British Columbia		Yukon Territory and Northwest Territories		Canada	
	1966	1971	1966	1971	1966	1971
Value of products sold of						
\$50,000 or over	724	869	—	—	10,282	10,443
35,000-\$49,999	456	572	—	—	9,384	9,026
25,000- 34,999	1,236	1,204	—	—	31,149	36,869
15,000- 24,999	1,314	1,070	2	—	44,217	42,794
10,000- 14,999	956	814	—	—	38,753	34,452
7,500- 9,999	1,329	1,201	—	—	58,103	47,661
5,000- 7,499	947	824	—	1	37,923	28,946
3,750- 4,999	1,445	1,343	2	2	47,024	34,008
2,500- 3,749	2,513	2,353	3	6	60,947	40,833
1,200- 2,499	4,071	4,407	6	5	55,271	39,799
250- 1,199	4,066	2,979	1	4	36,692	26,461
50- 249	28	36	5	—	777	776
Institutional farms, etc.						
Total	19,085	18,400	19	18	430,522	366,128

11.30 Census-farms with sales of \$2,500 or more, classified by type of farm and by province, Census 1971 (number)

Type of farm	Province or territory					
	Nfld.	PEI	NS	NB	Que.	Ont.
Dairy	70	629	1,019	821	28,646	17,718
Cattle, hogs, sheep (excl. dairy farms)	40	980	655	535	5,183	28,129
Poultry	54	21	169	111	1,561	1,912
Wheat	—	—	—	—	20	313
Small grains (excl. wheat farms)	—	11	9	4	342	5,189
Field crops, other than small grains	30	616	76	670	1,124	4,593
Fruits and vegetables	58	26	250	98	1,472	3,856
Forestry	5	6	114	119	331	165
Miscellaneous specialty	5	8	109	26	423	1,606
Mixed	20	483	167	219	1,830	2,186
Livestock combination	3	400	77	132	1,169	902
Field crops combination	—	16	8	15	137	567
Other combination	17	67	82	72	524	717
Total	282	2,780	2,568	2,603	40,932	65,667
	Man.	Sask.	Alta.	BC	YT and NWT	Canada
Dairy	1,614	701	2,490	1,633	—	55,341
Cattle, hogs, sheep (excl. dairy farms)	9,829	15,913	25,843	2,501	2	89,610
Poultry	519	210	413	644	1	5,615
Wheat	2,738	26,516	3,893	166	—	33,646
Small grains (excl. wheat farms)	7,249	13,900	9,105	390	—	36,199
Field crops, other than small grains	376	112	814	387	—	8,798
Fruits and vegetables	65	14	40	1,948	—	7,827
Forestry	16	3	28	162	—	949
Miscellaneous specialty	209	128	320	571	—	3,405
Mixed	2,721	5,433	3,587	223	—	16,869
Livestock combination	1,418	2,269	1,612	37	—	8,019
Field crops combination	767	1,808	1,301	86	—	4,705
Other combination	536	1,356	674	100	—	4,145
Total	25,336	62,930	46,533	8,625	3	258,259

11.31 Size of census-farms, by province, Census 1971 (number)

Size of farm	Province or territory					
	Nfld.	PEI	NS	NB	Que.	Ont.
Under 3 acres	197	33	155	79	483	1,529
3- 9 acres	321	58	234	99	893	3,619
10- 69 "	358	660	976	552	7,414	16,763
70- 239 "	129	2,935	2,732	2,737	38,834	52,778
240- 399 "	20	611	1,025	1,134	9,903	13,315
400- 559 "	5	145	473	513	2,793	4,233
560- 759 "	4	62	222	188	647	1,461
760-1,119 "	2	19	127	124	226	715
1,120-1,599 "	1	12	34	34	41	224
1,600 acres and over	5	8	30	25	23	85
Total	1,042	4,543	6,008	5,485	61,257	94,722
	Man.	Sask.	Alta.	BC	YT and NWT	Canada
Under 3 acres	146	131	204	1,030	1	3,988
3- 9 acres	532	301	700	3,470	1	10,228
10- 69 "	1,713	886	2,521	6,765	3	38,611
70- 239 "	6,391	7,213	10,609	3,186	7	127,551
240- 399 "	7,739	12,411	12,606	1,100	3	59,867
400- 559 "	6,066	11,780	9,128	685	—	35,821
560- 759 "	4,979	12,638	8,196	573	—	28,970
760-1,119 "	4,381	15,316	8,478	607	3	29,998
1,120-1,599 "	1,910	9,261	4,846	390	—	16,753
1,600 acres and over	1,124	7,033	5,414	594	—	14,341
Total	34,981	76,970	62,702	18,400	18	366,128

11.32 Age of census-farm operators, by province, Censuses 1966 and 1971 (number)

Age	Province or territory					
	Newfoundland		Prince Edward Island		Nova Scotia	
	1966	1971	1966	1971	1966	1971
Age of operator						
Under 25 years	19	14	132	96	82	60
25-34 "	153	81	789	549	742	542
35-44 "	326	202	1,266	931	1,640	1,072
45-54 "	569	362	1,668	1,186	2,690	1,704
55-59 "	243	151	803	650	1,280	917
60-64 "	166	115	600	490	1,131	710
65-69 "	120	62	510	309	879	486
70 years or over	113	55	589	332	1,177	517
Total	1,709	1,042	6,357	4,543	9,621	6,008
	New Brunswick		Quebec		Ontario	
	1966	1971	1966	1971	1966	1971
Age of operator						
Under 25 years	94	75	1,506	1,144	1,865	1,688
25-34 "	719	474	11,210	8,251	13,037	11,802
35-44 "	1,643	995	20,350	14,487	25,442	21,757
45-54 "	2,596	1,709	23,282	19,038	29,199	26,705
55-59 "	1,174	837	9,571	7,920	13,380	11,520
60-64 "	992	641	6,930	5,443	11,459	9,013
65-69 "	642	389	4,137	2,828	7,884	6,369
70 years or over	846	365	3,308	2,146	7,621	5,868
Total	8,706	5,485	80,294	61,257	109,887	94,722
	Manitoba		Saskatchewan		Alberta	
	1966	1971	1966	1971	1966	1971
Age of operator						
Under 25 years	931	1,037	2,634	2,735	1,916	1,591
25-34 "	5,171	4,533	11,888	9,695	10,460	8,915
35-44 "	9,436	7,577	20,599	16,611	17,244	15,088
45-54 "	11,483	10,196	24,067	22,317	18,516	17,930
55-59 "	4,899	4,718	10,025	9,991	7,949	7,225
60-64 "	3,739	3,468	7,515	7,507	6,555	5,684
65-69 "	2,236	1,983	4,540	4,432	3,857	3,638
70 years or over	1,852	1,469	4,418	3,682	2,914	2,631
Total	39,747	34,981	85,686	76,970	69,411	62,702
	British Columbia		Yukon Territory and Northwest Territories		Canada	
	1966	1971	1966	1971	1966	1971
Age of operator						
Under 25 years	230	209	—	—	9,409	8,649
25-34 "	2,028	2,041	4	3	56,201	46,886
35-44 "	4,603	4,705	5	6	102,554	83,431
45-54 "	5,310	5,317	6	4	119,386	106,468
55-59 "	2,326	2,225	—	3	51,650	46,157
60-64 "	2,026	1,716	2	1	41,115	34,788
65-69 "	1,243	1,176	—	1	26,048	21,673
70 years or over	1,319	1,011	2	—	24,159	18,076
Total	19,085	18,400	19	18	430,522	366,128

11.33 Selected farm machinery, by province, Censuses 1966 and 1971 (number)

Type of machine		Province or territory					
		Nfld.	PEI	NS	NB	Que.	Ont.
Automobiles	1966	426	5,026	5,700	5,869	56,464	104,539
	1971	347	4,112	4,408	4,359	48,993	97,841
Motor trucks	1966	764	3,306	5,393	4,404	24,499	67,622
	1971	572	3,055	4,540	3,969	21,129	67,937
Tractors	1966	519	6,341	7,252	7,989	81,674	162,303
	1971	430	5,865	6,535	6,786	80,878	165,752
Grain combines	1966	—	1,020	252	965	6,108	25,372
	1971	—	1,237	319	887	5,804	25,320
Swathers	1966	—	59	51	69	2,953	4,578
	1971	6	104	81	137	3,866	7,845
Pick-up hay balers	1966	53	1,806	2,128	2,300	24,574	38,201
	1971	69	1,964	2,317	2,394	31,974	39,348
Forage crop harvesters	1966	9	90	175	166	3,705	11,567
	1971	10	146	290	209	5,021	13,136
		Man.	Sask.	Alta.	BC	YT and NWT	Canada
Automobiles	1966	35,800	72,571	53,171	16,381	10	355,957
	1971	32,063	62,929	51,564	17,773	8	324,397
Motor trucks	1966	36,689	102,470	85,559	14,116	14	344,836
	1971	41,306	116,600	93,471	17,243	27	369,849
Tractors	1966	65,552	134,908	112,245	19,676	24	598,483
	1971	64,587	132,632	111,256	21,953	24	596,698
Grain combines	1966	24,815	67,144	42,838	1,667	1	170,182
	1971	23,325	61,811	42,373	1,673	2	162,751
Swathers	1966	23,530	56,321	35,706	949	—	124,216
	1971	23,833	61,282	40,749	1,925	1	139,829
Pick-up hay balers	1966	12,712	26,155	25,161	3,858	6	136,954
	1971	13,472	28,574	28,187	4,527	6	152,832
Forage crop harvesters	1966	1,591	2,203	3,237	1,573	1	24,317
	1971	1,342	2,630	3,869	1,879	2	28,534

11.34 Estimated area and production of wheat harvested¹ in 1972 and 1973 in specified countries, with average for 1967-71

Continent and country	Harvested area of wheat ('000 ha)			Production of wheat ('000 t)		
	Average 1967-71	1972	1973P	Average 1967-71	1972	1973P
NORTH AMERICA	30,537	28,502	32,592	57,838	58,305	65,734
Canada	9,421	8,640	10,021	15,106	14,514	17,112
Guatemala	37	45	47	32	44	44
Honduras	—	1	1	—	1	1
Mexico	715	680	720	2,005	1,700	2,000
United States	20,363	19,136	21,803	40,694	42,046	46,577
SOUTH AMERICA	7,737	7,562	6,810	9,257	8,866	9,192
Argentina	4,971	4,965	3,850	6,136	6,900	6,000
Bolivia	75	90	118	60	78	105
Brazil	1,293	1,500	1,820	1,192	680	1,850
Chile	724	534	550	1,202	747	770
Colombia	67	57	50	76	65	50
Ecuador	72	60	47	65	50	43
Paraguay	36	30	25	37	19	20
Peru	143	140	145	132	140	149
Uruguay	354	185	204	358	186	204
Venezuela	2	1	1	1	1	1
EUROPE	27,876	27,674	26,623	72,700	81,839	82,112
EEC						
Belgium	200	211	201	832	942	1,005
Denmark	104	135	119	482	592	523
France	3,955	3,958	3,957	14,427	18,123	17,792
Germany, Federal Republic of	1,482	1,626	1,603	5,979	6,410	6,920
Ireland	87	68	56	335	270	182
Italy	4,112	3,804	3,590	9,704	9,421	8,899
Luxembourg	14	12	11	42	43	36
Netherlands	149	156	138	701	673	725
United Kingdom	970	1,127	1,146	3,957	4,761	5,030
Total, EEC	11,073	11,097	10,821	36,459	41,235	41,112
Austria	291	274	269	965	863	949
Finland	209	179	188	471	463	417
Greece	971	904	865	1,804	1,919	1,738
Malta and Gozo	1	1	1	2	2	2
Norway	4	3	5	12	12	20
Portugal	599	511	479	634	612	489
Spain	3,868	3,560	3,151	5,020	4,562	3,915
Sweden	255	268	304	1,016	1,150	1,345
Switzerland	99	89	87	385	375	330
Total, Western Europe	17,370	16,886	16,180	46,767	51,193	50,317

11.34 Estimated area and production of wheat harvested¹ in 1972 and 1973 in specified countries, with average for 1967-71 (concluded)

Continent and country	Harvested area of wheat ('000 ha)			Production of wheat ('000 t)		
	Average 1967-71	1972	1973P	Average 1967-71	1972	1973P
EUROPE (concluded)						
Albania	136	135	135	199	200	200
Bulgaria	1,038	960	975	2,900	3,560	3,637
Czechoslovakia	1,033	1,192	1,235	3,196	4,016	4,655
German Democratic Republic	579	690	700	2,200	2,744	2,765
Hungary	1,209	1,317	1,300	3,315	4,089	4,495
Poland	1,915	2,048	1,962	4,640	5,147	5,807
Romania	2,662	2,522	2,450	4,794	6,047	5,500
Yugoslavia	1,934	1,924	1,696	4,691	4,843	4,736
Total, Eastern Europe	10,505	10,788	10,453	25,933	30,646	31,795
USSR (Europe and Asia)	65,990	58,492	63,155	89,845	85,950	109,680
AFRICA						
Algeria	8,700	9,354	9,423	7,736	9,345	8,737
Angola	2,209	2,200	2,150	1,376	1,350	1,100
Egypt	17	13	13	19	10	10
Ethiopia	552	521	570	1,486	1,616	1,837
Kenya	1,068	1,100	1,110	810	860	850
Libya	152	104	100	205	150	135
Morocco	189	120	110	46	80	60
Mozambique	1,847	2,058	2,187	1,839	2,405	1,897
Nigeria	10	13	13	9	13	13
Rhodesia	2	3	2	5	6	4
South Africa	11	25	25	37	85	85
Sudan	1,739	2,017	2,025	1,338	1,737	1,773
Tanzania	100	124	122	116	165	170
Tunisia	39	53	43	48	65	50
Zaire, Republic of	764	1,000	950	403	800	750
Asia	1	3	3	1	3	3
ASIA						
Afghanistan	65,947	69,166	70,565	67,171	82,575	79,354
Bangladesh	2,800	2,513	3,000	2,508	2,952	3,700
Burma	24	127	121	23	100	100
China, People's Republic of	84	80	80	45	50	50
Cyprus	24,440	24,400	25,000	23,600	28,000	28,000
India	56	55	15	77	50	10
Iran	15,732	19,139	19,881	18,102	26,410	24,923
Iraq	4,280	4,300	4,300	3,880	4,034	4,000
Israel	1,872	2,100	2,000	1,059	1,600	800
Japan	105	109	101	176	301	230
Jordan	274	114	75	736	284	202
Korea, Democratic People's Republic of	260	278	150	164	266	60
Korea, Republic of	160	160	160	89	85	85
Lebanon	164	103	70	340	241	162
Mongolia	61	64	64	52	65	30
Nepal	344	360	360	231	270	285
Pakistan	159	150	150	211	210	200
Saudi Arabia	6,018	5,799	5,973	6,247	6,890	7,800
Southern Yemen	100	100	100	146	150	150
Syria	14	14	14	16	15	15
Taiwan	835	1,100	850	580	1,100	550
Turkey	5	1	1	10	2	2
OCEANIA	8,160	8,100	8,100	8,880	9,500	8,000
Australia	8,722	7,906	9,040	10,240	6,905	12,141
New Zealand	8,606	7,778	8,955	9,859	6,510	11,854
World total	115	128	85	381	395	287
World total	215,507	208,656	218,218	314,787	335,785	366,950

¹Years shown refer to years of harvest in the Northern Hemisphere. Harvests of Northern Hemisphere countries are combined with those of the Southern Hemisphere which immediately follow.

11.35 Estimated production of oats and barley harvested¹ in 1972 and 1973 in specified countries, with average for 1967-71 (thousand metric tons)

Continent and country	Oats			Barley		
	Average 1967-71	1972	1973P	Average 1967-71	1972	1973P
NORTH AMERICA	<i>18,476</i>	<i>14,749</i>	<i>14,760</i>	<i>17,933</i>	<i>20,715</i>	<i>19,775</i>
Canada	5,336	4,630	5,041	8,535	11,285	10,333
Mexico	51	75	83	225	210	200
United States	13,089	10,044	9,636	9,173	9,220	9,242
SOUTH AMERICA	<i>693</i>	<i>761</i>	<i>727</i>	<i>1,062</i>	<i>1,392</i>	<i>1,302</i>
Argentina	488	566	520	527	880	820
Brazil	25	27	27	29	26	26
Chile	118	109	112	117	107	119
Colombia	—	—	—	86	100	75
Ecuador	1	1	2	105	90	65
Peru	—	—	—	162	160	165
Uruguay	61	58	66	36	29	32
EUROPE	<i>19,737</i>	<i>19,451</i>	<i>18,348</i>	<i>47,256</i>	<i>55,008</i>	<i>56,316</i>
EEC						
Belgium	322	277	254	575	637	688
Denmark	773	637	462	4,991	5,572	5,451
France	3,002	3,084	2,817	9,104	10,425	10,844
Germany, Federal Republic of	3,965	3,909	4,030	4,885	5,817	6,423
Ireland	240	179	170	751	981	843
Italy	482	440	419	307	390	458
Luxembourg	46	43	43	49	54	56
Netherlands	289	144	133	387	340	380
United Kingdom	1,299	1,255	1,106	8,447	9,238	8,992
Total, EEC	10,419	9,968	9,434	29,495	33,454	34,135
Austria	301	255	287	881	977	1,021
Finland	1,179	1,245	1,084	856	1,140	897
Greece	122	108	102	686	873	857
Malta and Gozo	—	—	—	2	2	2
Norway	189	271	349	548	521	535
Portugal	103	85	76	72	62	55
Spain	511	440	427	3,608	4,358	4,408
Sweden	1,532	1,630	1,226	1,770	1,883	1,744
Switzerland	34	37	40	134	156	169
Total, Western Europe	14,390	14,039	13,025	38,052	43,426	43,823
Albania	17	17	17	9	10	10
Bulgaria	105	88	90	1,023	1,423	1,485
Czechoslovakia	897	725	756	2,336	2,669	2,971
German Democratic Republic	783	890	704	2,065	2,592	2,575
Hungary	77	60	67	817	802	870
Poland	3,012	3,212	3,216	1,884	2,750	3,163
Romania	138	160	175	594	849	745
Yugoslavia	317	260	298	476	487	674
Total, Eastern Europe	5,347	5,412	5,323	9,204	11,582	12,493
USSR (Europe and Asia)	<i>13,029</i>	<i>14,100</i>	<i>17,455</i>	<i>31,791</i>	<i>36,800</i>	<i>54,981</i>
AFRICA	<i>186</i>	<i>183</i>	<i>149</i>	<i>3,769</i>	<i>4,037</i>	<i>3,212</i>
Algeria	38	40	32	457	450	400
Egypt	—	—	—	103	107	110
Ethiopia	—	—	—	1,496	1,500	1,500
Morocco	19	39	20	1,557	1,744	914
South Africa	128	104	97	34	36	28
Tunisia	—	—	—	122	200	260
ASIA	<i>1,369</i>	<i>1,253</i>	<i>1,317</i>	<i>18,635</i>	<i>18,579</i>	<i>16,743</i>
Afghanistan	—	—	—	347	375	375
Bangladesh	—	—	—	—	16	19
China, People's Republic of	840	800	900	6,440	7,000	7,000
Cyprus	—	—	—	82	70	15
India	—	—	—	2,755	2,577	2,327
Iran	—	—	—	1,098	800	900
Iraq	—	—	—	847	1,000	680
Israel	—	—	—	27	33	17
Japan	76	57	41	788	325	216
Jordan	—	—	—	39	46	14
Korea, Republic of	—	—	—	1,979	1,965	1,778
Lebanon	—	—	—	11	8	6
Pakistan	—	—	—	112	103	110
Saudi Arabia	—	—	—	34	35	35
Syria	—	—	—	380	500	350
Taiwan	—	—	—	1	1	1
Turkey	453	396	376	3,694	3,725	2,900
OCEANIA	<i>1,366</i>	<i>789</i>	<i>1,230</i>	<i>2,163</i>	<i>1,969</i>	<i>2,719</i>
Australia	1,313	740	1,182	1,919	1,708	2,474
New Zealand	53	49	48	244	261	245
World Total	54,855	51,286	53,986	122,609	138,500	155,048

¹Years shown refer to years of harvest in the Northern Hemisphere. Harvests of Northern Hemisphere countries are combined with those of the Southern Hemisphere which immediately follow.

11.36 Supply and disposition of Canadian grain, crop years ended July 31, 1971 and 1972 (million bushels)

Item	Wheat	Oats	Barley	Rye	Flaxseed	Rapeseed
CROP YEAR 1970-71						
Carryover, Aug. 1, 1970	1,008.7	148.3	205.1	11.2	6.6	3.7
Production in 1970	331.6	353.1	408.3	18.9	48.0	72.2
Imports	—	—	—	—	—	—
Total, supply	1,340.3	501.4	613.4	30.2	54.5	75.9
Exports ¹	435.3	13.4	179.6	8.9	21.2	46.8
Domestic use ²	170.9	362.7	289.5	8.3	8.0	18.0
Total, disposition	606.1	376.0	469.1	17.2	29.2	64.9
Carryover, July 31, 1971	734.2	125.4	144.3	12.9	25.3	11.0
CROP YEAR 1971-72						
Carryover, Aug. 1, 1971	734.2	125.4	144.3	12.9	25.3	11.0
Production in 1971	529.6	363.5	601.6	21.9	22.4	95.0
Imports	—	—	—	—	—	—
Total, supply	1,263.7	488.9	745.9	34.9	47.7	106.0
Exports ¹	503.8	10.5	230.6	10.8	25.7	42.6
Domestic use ²	176.2	360.1	339.5	8.3	5.9	20.3
Total, disposition	679.9	370.6	570.1	19.1	31.6	62.9
Carryover, July 31, 1972	583.8	118.3	175.8	15.8	16.0	43.1

¹Includes seed wheat, wheat flour in terms of wheat; seed oats, rolled oats and oatmeal in terms of oats; and malt in terms of barley.

²Includes human food, seed requirements, industrial use, loss in handling and animal feed.

11.37 Lake shipments of Canadian grain from Thunder Bay, navigation seasons 1971 and 1972 (bushels)

Year and item	To Canadian ports	To US ports	To overseas ports	Total shipments
1971				
Wheat	307,906,649	—	4,389,084	312,295,733
Oats	18,933,441	—	7,877,700	26,811,141
Barley	152,950,334	9,013,085	5,745,223	167,708,642
Rye	1,686,038	—	3,107,697	4,793,735
Flaxseed	6,316,088	—	11,485,276	17,801,364
Rapeseed	2,080,183	—	14,020,586	16,100,769
Mustard seed	—	—	1,125,369	1,125,369
Total	489,872,733	9,013,085	47,750,935	546,636,753
1972				
Wheat	324,612,818	—	7,122,385	331,735,203
Oats	24,620,884	1,604,657	4,381,183	30,606,724
Barley	151,109,450	15,063,437	2,367,309	168,540,196
Rye	1,134,171	152,221	3,151,425	4,437,817
Flaxseed	1,855,234	—	12,577,135	14,432,369
Rapeseed	3,323,867	—	15,714,257	19,038,124
Mustard seed	—	—	1,281,236	1,281,236
Total	506,656,424	16,820,315	46,594,930	570,071,669

11.38 Licensed grain storage capacity and grain in store, crop years 1970-71 and 1971-72

Crop year and storage position	Licensed storage capacity	Canadian grain ¹ in licensed storage				Proportion of licensed storage capacity occupied		
	Dec. 1, 1970 '000 bu	Dec. 2, 1971 '000 bu	Mar. 31, 1971 '000 bu	July 31, 1971 '000 bu	Dec. 2, 1970 %	Mar. 31, 1971 %	July 31, 1971 %	
1970-71								
Primary elevators	398,294	278,958	302,264	303,935	70.0	75.9	76.3	
Process elevators	13,364	5,818	6,172	6,153	43.5	46.2	46.0	
Interior terminals	17,100	14,168	10,182	9,379	82.9	59.5	54.8	
Pacific Coast	28,318	15,471	6,512	12,793	54.6	23.0	45.2	
Churchill	5,000	2,955	2,955	4,449	59.1	59.1	89.0	
Thunder Bay	105,571	43,658	85,860	48,728	41.4	81.3	46.2	
Georgian Bay and upper Lake ports	35,316	29,403	8,950	8,190	83.3	25.3	23.2	
Lower Lake and upper St. Lawrence ports	19,100	10,053	6,211	4,851	52.6	32.5	25.4	
Lower St. Lawrence ports	69,182	31,313	18,450	32,788	45.3	26.7	47.3	
Maritime ports (excl. Newfoundland)	8,229	7,346	2,316	2,973	89.3	28.1	36.1	
Total, 1970-71	699,475	439,143	449,872	434,239	62.8	64.3	62.1	

11.38 Licensed grain storage capacity and grain in store, crop years 1970-71 and 1971-72 (concluded)

11.36 Licensed grain storage capacity and grain in storage for crop years 1971-72 and 1972-73							
Crop year and storage position	Licensed storage capacity	Canadian grain ¹ in licensed storage			Proportion of licensed storage capacity occupied		
	Dec. 1, 1971 '000 bu	Dec. 1, 1971 '000 bu	Mar. 29, 1972 '000 bu	July 31, 1972 '000 bu	Dec. 1, 1971 %	Mar. 29, 1972 %	July 31, 1972 %
1971-72							
Primary elevators	385,420	240,776	251,972	216,289	62.5	65.4	56.1
Process elevators	13,624	8,271	7,299	8,484	60.7	53.6	62.3
Interior terminals	17,100	8,584	5,957	9,689	50.2	34.8	56.7
Pacific Coast	28,319	13,741	10,245	14,795	48.5	36.2	52.2
Churchill	5,000	1,281	1,251	4,517	25.6	25.0	90.3
Thunder Bay	105,486	58,213	68,443	62,428	55.2	64.9	59.2
Georgian Bay and upper Lake ports	34,050	28,188	6,523	18,566	82.8	19.2	54.5
Lower Lake and upper St. Lawrence ports	19,100	9,217	5,626	9,953	48.3	29.5	52.1
Lower St. Lawrence ports	69,107	34,900	23,503	28,925	50.5	34.0	41.9
Maritime ports (excl. Newfoundland)	8,229	6,513	3,853	1,450	79.1	46.8	17.6
Total, 1971-72	685,435	409,684	384,672	375,096	59.8	56.1	54.7

¹Wheat, oats, barley, rye, flaxseed and rapeseed.

11.39 Wheat milled for flour, and production and exports of wheat flour, 10-year average 1960-69 and crop years ended July 31, 1970-73

Crop year	Wheat milled for flour '000 bu	Wheat flour production cwt	Wheat flour exports	
			Amount cwt	Production %
Av. 1959-60 — 1968-69	90,486	40,340,185	14,678,754	36.4
1969-70	90,557	39,640,459	11,723,205	29.6
1970-71	87,467	38,534,863	10,802,813	28.0
1971-72	88,124	39,071,806	10,745,908	27.5
1972-73	86,390	38,049,127	10,154,053	26.7

Sources

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Chapter 12

Mines and minerals

12.1 Canada's mineral industry

12.1.1 Review of the industry

The Canadian mineral industry experienced moderate growth during 1972. World markets strengthened in the last half of the year and inventories accumulated by some Canadian producers began to decrease. The value of mineral production in 1972 increased 7% compared with an increase of 4% the previous year.

Canada's mineral production in 1972 was valued at \$6,403 million compared with \$5,968 million in 1971 and \$5,722 million in 1970. Metal mines showed a decrease in output and non-metal mines showed a slight increase; however, the large increase in the production of mineral fuels more than offset these changes.

Canada produces about 60 different minerals from domestic deposits. The 10 leading minerals comprised 82% of the total output by value in 1972 compared with 83% in 1971 and 82% in 1970. The 1972 value for the 10 leading minerals totalled \$5,270 million. Individual values were: petroleum \$1,569 million, copper \$806 million, nickel \$717 million, iron ore \$489 million, zinc \$475 million, natural gas \$397 million, natural gas by-products \$251 million, cement \$209 million, asbestos \$206 million and coal \$151 million. The first four accounted for 56% of the total value of mineral production in 1972 compared to 58% the previous year (Tables 12.1 - 12.5).

Canada produces nearly all the minerals needed for modern economies although a few, such as manganese, chromium, bauxite and tin, are imported from lower-cost sources.

The strength of Canada's mineral industry is based on export sales. About 85.9% of the total mineral production was exported with crude minerals comprising 59.7% of the total mineral exports. Apparent consumption of minerals in Canada ranged from 28.6% for copper to 3.9% for nickel.

Exports of minerals and fabricated mineral products have led to several periods of sustained expansion in the Canadian economy in the past and they have been a major factor in the recent increase in Canada's export trade. In 1972 these exports were valued at \$5,499.8 million or 28.2% of the \$19,500.1 million total of merchandise exports. This proportion is typical of the past decade and has been maintained despite the sharp increase in Canada's automobile trade with the United States in the late 1960s. Increased demand in the United States was the main factor in the increase in Canada's exports. The major consumers of Canada's exports of mineral products were: the United States 64%, Britain 9.7%, Japan 9.1% and the European Economic Community 7%. Comparable percentages for 1971 were: United States 59%, Britain 12%, Japan 9% and EEC 8%. Exports to Britain and the European Economic Community continued to decline while the United States remained Canada's most important export customer.

Mineral production is divided into four sectors: metallics, non-metallics, mineral fuels and structural materials. The contribution of each of these groups to the total value of production in 1972 was as follows (1971 figures in parentheses): mineral fuels 37% (34%), metallics 46% (49%), non-metallics 8% (8%) and structural materials 9% (9%). The value of mineral fuels production increased with the continued rise in export sales. Structural materials are sold mainly in the domestic market where the demand is more stable.

Canada leads the world in mineral exports and ranks third in mineral production behind the United States and the Soviet Union. The mineral industry has always been a major factor in Canada's economic development and is still the main force in the northward advance of Canada's frontiers of population and economic activity.

Prices presented a mixed picture in 1972. The price index for ferrous metals, iron ore, ferro-alloys and additives showed a decline of 8.1% during the year. Non-ferrous metals, after declining from their peak value in 1970, registered a slight gain in 1972 as non-metallic mineral prices continued to increase, but at a slower rate than in the previous year. An over-supply of ferrous metals during most of the year brought about a reduction in prices, particularly for ferro-alloys. A strengthening of world demand for non-ferrous

metals maintained prices near the 1971 levels. The non-metallic mineral prices showed the greatest increase at 3.5%.

Petroleum (with natural gas), nickel, copper, iron ore and zinc together contribute three quarters of the total Canadian mineral output value and some discussion of production locations and markets is warranted.

Petroleum, comprising crude oil and natural gas production and refining, is Canada's largest mineral industry. Domestic production and exports are small in the context of the world's industry but are of great significance to Canada. The industry's growth in the past two decades has been of particular importance because of its effect on the balance of payments, as a source of revenue to the several levels of government, and for its impact on engineering and construction.

In 1972 total petroleum production (crude oil, gas and gas by-products) was valued at \$2,217 million, an increase of 17.1% over the 1971 value of \$1,893 million. Crude oil production is concentrated in Alberta, with Saskatchewan in second place and minor production elsewhere. The pattern of crude oil distribution in Canada reflects the National Oil Policy, which allocates markets west of the Ottawa Valley to Canada's mid-continent producers, while Quebec and Maritime markets are supplied by oil from overseas. Transportation costs from the mid-continent to eastern markets are significant and production costs are greater than in Venezuela or the Middle East. The mid-continent producers have an export market in mid-continental United States which in 1971 almost equalled the volume imported into eastern Canada. Canada produces oil almost equivalent to its total domestic needs but is unable to supply the eastern market at a competitive rate because of transportation costs. Alberta oilfields are producing at about 75% capacity and the region's economic reserves of oil will last 15 years at current depletion rates. Canada's North is the focus of much optimism for large-scale oil finds.

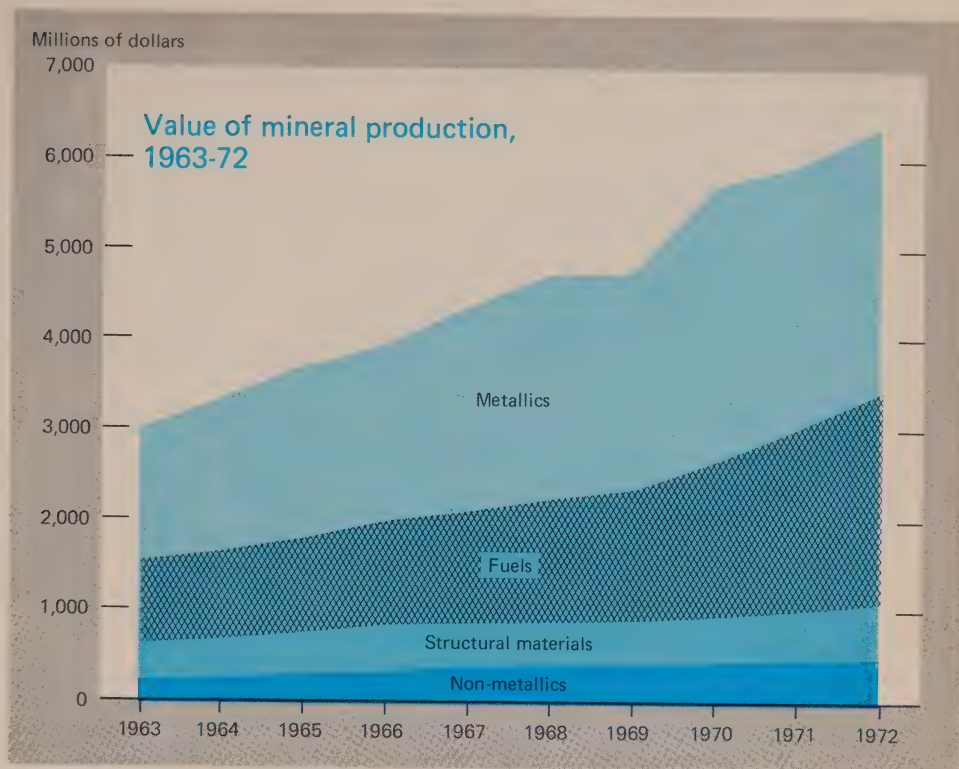
Natural gas is an important domestic product and an increasingly important export product. Generally gas and oil are found together. In Canada, the Arctic and the western provinces have the major known reserves of gas. Comparison of oil and gas production is best done by thermal values which are usually reflected in price. The value of the production of gas and gas by-products in Canada in 1972 was \$648.1 million, compared with that of oil at \$1,568.8 million; this represents a gas value of 41.3% of the oil value. In 1971 the gas value was 39.5% of the oil value. Future growth depends primarily on access to the United States market where import policy is focused on the price of natural gas rather than the volume imported, reflecting the scarcity of domestic gas reserves and supplies.

Canada's gas reserves are sufficient for 20-25 years but the known reserves of commercial gas declined for the first time in 1972. This does not include the discoveries of gas in the Arctic because there is as yet no economical method of transporting it to markets in the south. Sales of natural gas and gas by-products totalled \$648.1 million, an increase of 20.9% compared to the previous year.

Copper was second by output value in 1972. Production of recoverable copper from Canadian mines rose to 793,303 tons, an increase of 10.0% over the previous year. Copper remained in over-supply in the world but a better balance between supply and demand was achieved during 1972. Copper is produced in all provinces except Prince Edward Island. British Columbia, Ontario and Quebec accounted for 29.5%, 25.2% and 22.3% of the net value of copper production in 1972, respectively.

Nickel ranked third among Canadian minerals produced in 1972. World over-supply, which led to the accumulation of large stockpiles by Canadian producers during 1971, continued into 1972 and production was cut back further by world producers. However, signs of an increased demand were evident late in the year. Canada is the world's leading producer of nickel.

Iron ore production decreased in 1972 because of labour strikes in the Quebec-Labrador region. Production was valued at \$489 million, a decrease of 11.9% compared to the previous year. Of the 28.8 million tons exported in 1972, the United States received 18.1 million, Britain 3.5 million, Western Europe 5.3 million and Japan 1.9 million. Present Canadian production capacity is about 50 million tons a year and the pelletizing capacity is 25 million tons a year. Projects currently under way in the Quebec-Labrador area will increase both production and pelletizing capacities. Newfoundland, Quebec, Ontario and British Columbia are the only producers of iron ore.



Zinc production in 1972 attained a record value of \$474.5 million despite a further reduction of 5,592 tons in mine production. Canada remained the world's leading mine producer.

Capital expenditures for new installations and equipment in the mineral industry were \$1,592.6 million, a decrease of 9.6% from the previous year. Repair expenditures to existing facilities were \$781.8 million, down 5.1% from 1971. Total expenditures in the minerals sector were \$2,096.7 million, reflecting the heavy investment required in the industry. Expenditures were equivalent to 32.7% of the total value of mineral production in 1972.

Over-all capital expenditures decreased in the minerals sector and increased in the mineral fuels sector (excluding coal). The decrease was largely attributable to completion of a number of metal mine projects, particularly open-pit mines in British Columbia. Investment in iron mines increased slightly to \$270.5 million. Completion of some projects in the Quebec-Labrador area will probably result in reduced capital expenditures in 1973. Capital expenditures in other mineral areas, non-metallics, coal and structural materials decreased 32.8% from the previous year. Some of this decrease can be attributed to the recent heavy spending on coal mines and to operational problems in the coal industry that have resulted in the diversion of capital for rationalization or replacement of some facilities.

Capital expenditures in the mineral fuels sector (excluding coal) increased to \$809 million, an increase of 9.2% over the previous year, with more emphasis being placed on exploration activity in areas where new finds of gas and oil have been reported. Expenditures in this sector are expected to increase substantially in the next few years.

The volume index of mineral production, which measures the mining industry's absolute growth (1961 = 100), increased 4.7% to 191.5 from 182.9 in 1971; the 1960-72 average annual rate of growth was 5.8%. In comparison the volume index of total industrial production increased 6.8% to 196.8 from 184.2 in 1971 and the average annual rate of growth in the period 1960-72 was 6.1%.

Alberta and Ontario accounted for 30.9% and 24.0%, respectively, of the Canadian output value of minerals. Alberta produced 27.5% and Ontario produced 26.0% of the output value of minerals in 1971. In 1972, Quebec accounted for 12.2%, British Columbia 10.6%, Saskatchewan 6.4%, Manitoba 5.0%, Newfoundland and Labrador 4.5%, Yukon Territory 1.9%, New Brunswick 1.9%, Northwest Territories 1.7%, Nova Scotia 0.9% and Prince Edward Island for a minimal amount of the output value of mineral production. Alberta produced 80.6% of the mineral fuels, Ontario produced 42.4% of the metals and 40.7% of the structural materials, and Quebec produced 41.3% of the non-metals. Tables 12.6 - 12.8 show the mineral production and value of production by province.

Newfoundland and Labrador. Mineral production in Newfoundland and Labrador was valued at \$290.6 million compared to \$343.4 million in 1971, a decrease of 15.4%. Iron ore production declined 17.4% to 18.1 million tons because of strikes in Labrador, the major iron ore producing area in Canada. Production of lead dropped 9.5% in 1972, and zinc production rose 27.6%. Asbestos production declined 7.8%. Fluorspar production rebounded to \$5.4 million, an increase of \$2.6 million over 1971.

Prince Edward Island. Sand and gravel is the only mining product of this province. Production, valued at \$1.1 million, increased 12.2% over the previous year.

Nova Scotia. Total mining production declined 4.4% to \$57.5 million in 1972. Coal production continued to decrease with the closing of two mines. Coal production in 1972 was 1.4 million tons, down from 2.0 million tons in 1971. A new mine at Langan is scheduled to start production in 1974. Production of non-metals rose to \$22.6 million in 1972 from \$21.0 million in 1971. Gypsum accounted for \$13.2 million, 58.4% of non-metallic production. Output of metallics continued to decline with the closing of the Walton mine of Dresser Minerals, Division of Dresser Industries, Inc.

New Brunswick. Mineral production increased to \$119.9 million from \$107.1 million in 1971. Metal products, which are produced mainly around Bathurst, represented 82.4% of the total mineral output. Zinc, lead and copper were the principal minerals produced. Coal production dropped to 429,544 tons in 1972 due to a lower demand by the provincial power company.

Quebec. Total mineral output was \$782.6 million, an increase of 1.6% over 1971. Metallics accounted for 55.4% of production, non-metallics 27.1%, and structural materials 17.5%. Mineral fuels production was insignificant. Copper, iron ore and zinc were the major metallics produced, accounting for 23.0%, 13.0% and 8.0% of Quebec's total mineral output. Asbestos was the major non-metallic, accounting for 20.1% of the total. Titanium dioxide, a non-metallic, is produced only in Quebec and has firm world markets; production was valued at \$40.8 million in 1972 compared to \$39.1 million in 1971.

Ontario produces minerals valued at more than \$1,500 million annually, mostly metallics. The value of metallics declined for the second consecutive year, dropping 3.1% in 1972 and 4.6% in 1971. Nickel, copper, zinc, iron ore and precious metals contributed 33.9%, 13.3%, 9.8%, 9.1% and 8.2%, respectively, to the provincial output. The range of minerals is more diverse than in any other province and the value of metallics produced, excluding nickel and copper, exceeds the production of any other province or territory. Output of fuels in Ontario is relatively small. The principal non-metals — salt, nepheline syenite, asbestos, gypsum, quartz and sulphur — are produced in relatively small quantities. Structural materials produced in 1972 increased in value to \$232 million from \$211 million in 1971.

Manitoba. Mineral production in 1972 was valued at \$323.3 million, a decrease of 2.0% from the previous year. Metallic minerals accounted for 84.4% of the total mineral production. Nickel, copper and zinc represented 58.2%, 18.8% and 5.4%, respectively, of total mineral output. Crude petroleum contributed 4.5% of the provincial total. Manitoba produced 25.6% of Canada's nickel but suffered a decline in value of production because of the cutback in nickel production due to world over-supply. Zinc production increased substantially over 1971 when output was reduced because of a five-month strike in the Flin Flon area.

Saskatchewan produces mainly mineral fuels and non-metals because the metal-rich geological formations of eastern Canada and the Rockies do not dominate the geology in Saskatchewan as they do elsewhere. Crude petroleum and potash represented 52.3% and 33.1% of the 1972 mineral production. Metallics constituted only 5.3% of the total. Renewed interest in uranium may result in increased production in the metals sector.

Alberta. Mineral production was valued at \$1,978.6 million in 1972 with crude petroleum, natural gas and natural gas by-products representing 93.8% of the total. Sulphur, produced as a by-product in the processing of natural gas, represented 0.9% of the mineral production. Alberta produced 79.0% of Canada's petroleum and 81.9% of Canada's natural gas in 1972. Coal production accounted for 2.6% of provincial production. Structural materials made up most of the remainder.

British Columbia. Mineral output increased 24.7% to \$678.0 million in 1972. Metallics comprised 59.2% and mineral fuels 27.0% of the mineral production. Copper, zinc, molybdenum and lead accounted for 35.1%, 7.6%, 6.4% and 4.4% of the total mineral production, respectively. Coal, crude petroleum and natural gas represented 10.7%, 9.4% and 6.3% of the total production, respectively. The copper industry continued to expand rapidly with mine production increasing 66.4% over the previous year. Coal production increased to 6.5 million tons in 1972 as some operational problems were solved. Asbestos was the principal non-metal produced.

Northwest Territories. The value of mineral production in 1972 increased to \$120.3 million from \$115.6 million in 1971. Metallic minerals accounted for almost all of the production. Zinc, lead, gold and silver comprised 53.8%, 23.1%, 14.7% and 5.6%, respectively, of the total mineral output. Crude oil and natural gas are of considerable potential value.

Yukon Territory. The value of production increased to \$106.8 million compared to \$93.1 million in 1971. Zinc, lead and asbestos comprised 42.3%, 32.2% and 12.2%, respectively. Output is not large by national standards but is increasing rapidly.

12.1.2 Metals

Copper. Canadian production of recoverable copper amounted to 793,303 tons valued at \$806.4 million in 1972. Canada produced 10.5% of the world's copper and ranks as the third largest producer. World mine production of copper increased 8% over the previous year, with all major producers except Japan registering increases. Canadian exports of copper concentrates and refined copper increased 32% and 3%, respectively. Imports declined 18.5%. Domestic consumption of copper rose slightly, but remained relatively consistent with the levels of the past eight years (Table 12.9).

Copper and nickel-copper ores were smelted at five locations in Canada at the end of 1972. The International Nickel Company of Canada, Limited (INCO) continued to operate a smelter at Copper Cliff, Ont., but temporarily suspended operations of the Coniston smelter. INCO cut back operations by 20% in 1971 and 9% in 1972 because of large nickel stocks. Falconbridge Nickel Mines Limited operated a smelter at Falconbridge, Ont. Ores and concentrates from most mines in the Atlantic Provinces, Quebec and Ontario were processed at the Noranda smelter of Noranda Mines, Limited or at the Murdochville smelter of Gaspé Copper Mines, Limited, both in Quebec. Major expansion programs were under way at both the Noranda and Murdochville smelters. At Murdochville smelter capacity will be raised by 27,000 tons of anode copper a year. A 300,000-ton-a-year sulphuric acid plant is under construction and some of the acid produced will be used to leach copper from low-grade oxide ores from the Copper Mountain mine. At Noranda the smelter is being expanded by the construction of a Noranda continuous smelting process reactor capable of producing 55,000 tons a year of blister copper in one furnace directly from concentrates. Operation of the reactor began early in 1973. Hudson Bay Mining and Smelting Co., Limited operates a smelter at Flin Flon, Man. Hudson Bay plans to produce anode copper instead of blister copper and has announced plans to erect an 825-ft smokestack to improve the dispersion of sulphur gases.

Electrolytic copper refineries were operated by INCO at Copper Cliff and by Canadian Copper Refiners Limited, a subsidiary of Noranda Mines, Limited, at Montreal East, Que. INCO's copper refining capacity at Copper Cliff is being increased by 10% through the installation of an electrowinning circuit to recover copper as a by-product. Canadian Copper Refiners Limited completed an expansion program in 1972 and announced plans for a further increase in capacity for 1973.

Fourteen small- and medium-sized mines were closed, production at four others was suspended for marketing reasons, and 14 new mines were opened, four of which were large open-pit operations in British Columbia. Production declined 18.3% in the Atlantic Provinces, 4.5%

in Quebec, 4.2% in Ontario, 65.9% in the Yukon Territory and 17.7% in the Northwest Territories. There was a major shift westward in copper mining capacity as production increased 9% in the Prairie Provinces and 66.4% in British Columbia.

Few new mines were scheduled for production, a result of low copper prices of 1971-72, possible excess production capacity in the world, temporary saturation of the Japanese market for copper concentrates and a slowdown in exploration in Canada.

Copper production in Newfoundland in 1972 totalled 9,513 tons valued at \$9.7 million from three mines, one of which closed in mid-1972. In New Brunswick copper production was 10,310 tons valued at \$10.5 million from two mines; another closed early in 1972. In Quebec production declined slightly to 176,432 tons valued at \$179.7 million from 184,823 tons valued at \$195.2 million in 1971. About 30 mines were operated during 1972, the main centres of production being Rouyn-Noranda, Val d'Or, Matagami, Chibougamau, Murdochville and Stratford Centre. Strikes at Campbell Chibougamau Mines Ltd., lasting three months, and Madeleine Mines Ltd., lasting one and a half months, adversely affected production.

Copper was produced at a number of mines in Ontario in 1972, the main operations being the nickel-copper mines of the Sudbury district, copper-zinc and copper mines near Timmins, and copper-zinc mines near Manitouwadge. Producers' shipments amounted to 289,723 tons valued at \$293.5 million compared to 302,370 tons valued at \$317.5 million in 1971. Seven mines closed and one opened in 1972.

Production in Manitoba and Saskatchewan was 72,378 tons valued at \$73.7 million. The major producer was Hudson Bay Mining and Smelting Co., Limited, which produced copper in the Flin Flon and Snow Lake areas. Sherritt Gordon Mines, Limited at Lynn Lake, INCO at Thompson and Anglo-Rouyn Mines Limited at La Ronge were the other producers. Production returned to normal levels in 1972 after a five-month strike at Hudson Bay Mining had reduced production in 1971. The Ruttan Lake mine of Sherritt Gordon Mines, Limited was the only new Canadian producer to begin operations in 1973.

Production of copper in British Columbia in 1972 amounted to 233,506 tons valued at \$237.8 million compared to 140,310 tons valued at \$148.1 million in 1971. Large open-pit mines were opened by four companies during the year: Gibraltar Mines Ltd. at McLeese Lake, Lornex Mining Corporation Ltd. at Highland Valley, Noranda Mines, Limited at Babine Lake and Similkameen Mining Company Limited at Princeton. The combined mill capacity of these mines is 101,000 tons a day.

Production in the Yukon Territory declined substantially in 1972. Whitehorse Copper Mines Ltd., which was the only producer in 1971, resumed production from the new Little Chief mine in December. Hudson-Yukon Mining Co., Limited produced copper during 1972, but operations were suspended in 1973 because of geological problems. Production of copper in the Northwest Territories developed principally as a by-product of silver mining.

Nickel. Canadian production of nickel in 1972 amounted to 258,987 tons valued at \$717.5 million. The nickel market, which began to fall late in 1970, continued to do so into 1972. World production of nickel declined 8.2%; Canadian production declined 12.0% compared with the previous year (Table 12.10).

Early in 1972, The International Nickel Company of Canada, Limited (INCO) announced that in addition to the 22% reduction in 1971, operations would be cut back by 10% to prevent further inventory accumulation. Falconbridge Nickel Mines Limited, in a move to offset rising costs and restrain nickel output, announced plans to reduce production by 5% effective April 1972. Both INCO and Falconbridge negotiated new three-year labour contracts in 1972 without strikes.

The nickel market gained strength during the latter half of 1972 in response to improving world economic activity and by the end of the year producers' inventories were declining. Three new nickel-copper mines began production during 1972. At Lac Édouard, Que., *Société Minière d'Exploration Ltée* (Somex) started tuning up its nickel-copper mine and concentrator in September. Concentrates from this mine, currently producing 240 tons a day, will be processed at the Sherritt Gordon Mines, Limited refinery in Alberta. INCO started mining its deposit at Shebandowan, Ont. at mid-year. The Wellgreen nickel-copper mine at Kluane Lake, YT, was placed in production by Hudson-Yukon Mining Co., Limited. However, the mine was

closed in July 1973 because underground development revealed major mining difficulties.

The Langmuir mine (jointly owned by Noranda Mines, Limited and INCO) near Timmins, Ont. went into production in 1973. Work on a small nickel-copper deposit near Temagami, Ont., owned by Kanichee Mining Incorporated, continued in 1972.

Consolidated Canadian Faraday Limited closed its Werner Lake mine in August 1972 when ore reserves were depleted. Texmont Mines Limited, which began mining in the Timmins area of Ontario in 1971, continued to produce a nickel concentrate until November 1972. Most of Texmont's concentrate was being stockpiled. Renzy Mines Limited suspended production at its open-pit mine in Hainault Township, Quebec in April 1972 when the smelter contract with Falconbridge was terminated.

Iron ore. Iron ore shipments in 1972 declined 7.8% to 39,783,000 tons compared with the previous year. Production amounted to 35,430,624 tons (Table 12.11). The balance of the shipments, 3,496,376 tons, came from producer stockpiles. The value of shipments declined 6.8% to \$517,150,000. [All figures pertaining to iron ore in this text are in long tons (2,240 lb.).]

Iron ore was produced by 17 companies at 18 locations with 10 operations in Ontario, three in British Columbia, two in Quebec, two in Labrador and one in Quebec-Labrador. Two by-product operations, Cominco Ltd. and Falconbridge Nickel Mines Limited, were closed in 1972. Estimated production capacity at the end of 1972 was 47.3 million tons of iron ore, of which 25.0 million tons was iron pellet capacity.

Newfoundland, the largest iron ore producing province, recorded the largest decrease in shipments, 3,144,997 tons or 16.1% compared with the previous year. In Quebec production dropped 981,684 tons or 8.9%. In the Quebec-Labrador area, a series of labour strikes lasting 6 to 12 weeks reduced production. The Iron Ore Company of Canada (IOC), the largest Canadian producer, experienced a decline of 20.9% in shipments as a result of a strike. Quebec Cartier Mining Company (QCM) reduced shipments by 6.3% and Wabush Mines increased production slightly. The construction of three large iron ore projects continued in 1972. IOC's expansion of the Carol Lake concentrator to 10 million tons a year and construction of two six million tons-a-year pellet plants at Sept-Îles were delayed by strikes and opened in early 1973. QCM continued to develop the Mount Wright ore project and townsite. These projects have provided a total of 3,350 new jobs.

With high domestic and US demand most Ontario mines shipped iron ore at near-capacity in 1972. Steel companies own the majority of mines in Ontario and receive most of the production. As a result Ontario mines are less susceptible to fluctuations in the world market. However, The International Nickel Company of Canada, Limited (INCO) produced 700,000 tons of iron pellets, well below capacity. Falconbridge closed its by-product iron (pyrrhotite) plant to reduce pollution and will close its new nickel-iron refinery in 1973 because of technical difficulties in processing.

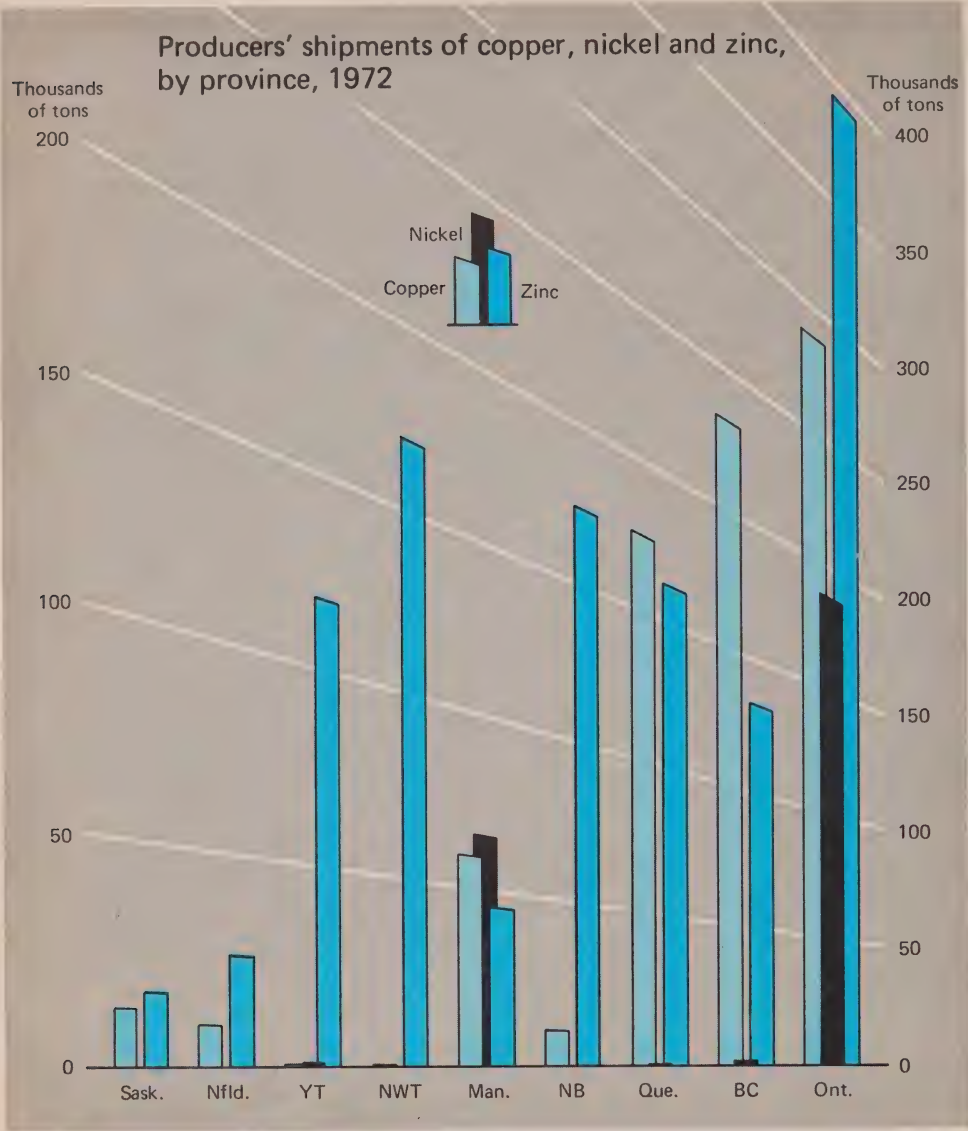
In British Columbia, shipments declined by 574,097 tons or 33.3%. A Japanese seamen's strike halted shipments to Japan and forced temporary closure of Wesfrob Mines Limited during part of 1972. Japanese and American customers also reduced their iron ore requirements. Texada Mines Ltd. continued to export to Japan using its own bulk carrier. Cominco Ltd. closed its iron ore recovery plant for economic reasons.

Since a large proportion of Canadian iron ore is exported, 72.4% in 1972, the industry is sensitive to world market conditions. Because of the slowdown in the steel industry and the seriousness of the world monetary situation, iron ore stocks and finished steel inventories were built up by the end of 1971. Combined with a reduction in projected Japanese requirements, this resulted in reduced iron ore exports in 1972.

Imports increased to 1.6 million tons, representing only the second increase in the downward trend that began in 1964. Imports are expected to rise to 3.0 million tons after 1974 when the Tilden Mine in Michigan begins production. Two Canadian steel companies have contracted to take 1.7 million tons a year.

Domestic shipments established a new record at 9.9 million tons. Consumption of iron ore increased to 11.7 million tons. The steel industry used 9.7 million tons of domestic ore, 1.6 million tons of imports and 0.4 million tons from consumer stocks.

Lead and zinc. Canadian production of lead in 1972 was 369,425 tons valued at \$114 million. Mine production decreased 8.9% in volume but increased 4.1% in value compared to the previous year (Table 12.12). Output of refined lead was 205,978 tons, up 11% from 1971.



Production of zinc in 1972 was 1.2 million tons valued at \$474.5 million. Production decreased 0.4% but the value increased 13.5% compared to the previous year (Table 12.13). Output of refined zinc was 524,885 tons in 1972, up 28% from 1971.

Exports of refined lead and zinc were substantially higher in 1972 due mainly to a world shortage of smelting capacity. Exports of lead and zinc in ores and concentrates declined for the same reason.

In the Atlantic Provinces lead production declined 27.3% to 57,692 tons and zinc production increased 10.3% to 201,118 tons in 1972. Three companies produced lead and zinc, one in Newfoundland and two in New Brunswick. Brunswick Mining and Smelting Corporation Limited in New Brunswick was the Maritimes' largest producer. Nigadoo River Mines Limited closed its mine at Robertville, NB, because of currently uneconomic ore grades. The mine may be reopened if prices warrant further production. American Smelting and Refining Company, Buchans Unit, was the only active producer in Newfoundland. Dresser Minerals, Division of Dresser Industries, Inc. closed its mine in Nova Scotia permanently.

In Quebec zinc production decreased 6.4% to 163,244 tons. Mining companies associated with Noranda Mines, Limited produced most of the zinc in Quebec. Mattagami Lake Mines Limited, the largest producer, mined 91,000 tons in 1972. Lake Dufault Division of Falconbridge Copper Limited increased zinc production to 19,109 tons after the first full year of production at the Millenbach Mine. Manitou-Barvue Mines Limited, which suspended operations at its Val d'Or mine in 1971, resumed production at a reduced rate in 1972. Orchan Mines Limited started production from a small deposit near Garon Lake. A relatively small amount of lead was produced.

In Ontario zinc production increased 8.0% to 394,891 tons. Ecstall Mining Limited, a wholly owned subsidiary of Texas Gulf Inc., operates Canada's largest zinc mine at Timmins. Production from the underground mine commenced in December and will increase until 1977 when open-pit mining operations are terminated. Geco Mines Limited recorded a substantial drop in production because of a two-month strike. Mattabi Mines Limited began production from its Sturgeon Lake property, which will produce 90,000 tons a year of zinc and some lead. Jameland Mines Limited and Kam-Kotia Mines Limited closed their mines in the Timmins area because of depletion of ore reserves. A relatively small amount of lead was produced, principally from Ecstall and Geco.

In Manitoba zinc production increased 82.5% to 45,607 tons. Hudson Bay Mining and Smelting Co., Limited continued full production from nine mines in the Flin Flon and Snow Lake districts of Manitoba and Saskatchewan. The company closed the Flexar mine due to ore exhaustion and opened mines at White Lake and Ghost Lake. Development of the Centennial mine, a copper-zinc orebody, began in mid-July 1973. Sherritt Gordon Mines, Limited reduced production at its Fox Lake mine because of difficulties in mining the first underground pillar. The Ruttan copper-zinc mine of Sherritt Gordon started production in 1973. A small amount of lead was also produced.

In British Columbia zinc production decreased 12.2% to 134,174 tons and lead production decreased 21.2% to 97,575 tons. Cominco Ltd.'s Sullivan mine at Kimberley, the leading producer of lead and zinc in BC, produced ore at close to 1971 levels despite a three-week strike. The Bradina mine of Bradina Joint Venture commenced operations in 1972 and produced a copper and a lead-zinc concentrate. Western Mines Limited increased lead and zinc production as the Myra Falls mine began producing in 1972.

In the Yukon lead production increased 2.6% to 111,461 tons and zinc production increased slightly to 118,613 tons. Anvil Mining Corp. Limited, Canada's largest lead producer, improved metal recoveries and concentrate grades that were responsible for the larger output of lead and zinc in 1972 and commenced an expansion of its mill to be completed early in 1974. United Keno Hill Mines Limited decreased production because of depletion of ore reserves at two mines. Placer Development Limited discovered a significant zone of lead-zinc mineralization and extensive exploration and drilling of the deposit took place in 1973.

In the Northwest Territories lead production increased slightly and zinc production decreased 24.3%. Pine Point Mines Limited, the sole producer of lead and zinc, recorded lower production primarily because of the lower grade ore treated. Pine Point purchased two claims from Coralta Resources Limited containing known lead-zinc orebodies which will be mined over the next three years. Drilling continued on Little Cornwallis Island on one of Canada's richest lead-zinc orebodies held by Arvik Mines Ltd. of which Cominco Ltd. owns 75% of the stock and Bankeno Mines Limited 25%.

There were four zinc refineries in operation at the end of 1972. Canadian Electrolytic Zinc Limited in Quebec refined mostly concentrates from mines associated with Noranda Mines, Limited. Hudson Bay Mining and Smelting Co., Limited produced a record amount of refined zinc in 1972. Ecstall's zinc plant commenced production in the second quarter of 1972. Cominco's refinery operated at near capacity except for a strike period of one month. Cominco is currently expanding its capacity by 10,000 tons of refined zinc a year. Brunswick is converting its lead-zinc smelter to a lead smelter; it stopped producing zinc in January 1972.

The lead refinery of Cominco Ltd. at Trail, BC, with a capacity of 210,000 tons annually, and that of Brunswick Mining and Smelting Corporation Limited at Belledune, NB, with an annual capacity of 30,000 tons, were Canada's only producers of primary lead metal. The Belledune plant is being converted from an Imperial Smelting Process lead-zinc blast furnace to a conventional lead blast furnace processing lead concentrates only, with a capacity of 70,000 tons of refined lead annually.

Gold. The most significant event for the gold industry in 1972 was the sharp increase in the price of gold on the open market, caused partly by reduced supplies from the Republic of South Africa on world markets. The price of gold opened in 1972 at US\$43.725 an ounce troy and by August 2 had increased to a high of US\$70. The price then dropped slightly, and for the last three months of the year gold was traded at about US\$61-\$65 an ounce troy. On November 15 the Winnipeg Commodities Market opened trading on gold futures, the first trading of gold on a futures commodity market.

Gold production in 1972 was 2,078,567 oz t valued at \$119.7 million compared to 2,260,730 oz t valued at \$79.9 million (Table 12.14).

No gold mines opened or closed in 1972. At the end of the year 21 lode gold mines were in operation. Three properties were scheduled to close, but the increased price of gold enabled them to continue.

All the gold produced in 1972 was sold on the open market and therefore no mines were eligible for assistance under the Emergency Gold Mining Assistance Act. This Act provides a guaranteed floor price of about \$48 an ounce troy to those mines eligible for maximum assistance payments.

All gold produced in the Atlantic Provinces in 1972 was recovered as a by-product of base-metal mining. Gold production totalled 17,316 oz t compared with 11,577 in 1971. Production from the new Ming orebody of Consolidated Rambler Mines Limited was responsible for most of the increase in gold production.

Gold production in Quebec in 1972 amounted to 539,669 oz t compared with 646,839 oz t in 1971, a decrease of 16.6%. Both the lode gold mines and by-product base-metal mines recorded a decrease in production. Agnico-Eagle Mines Limited proceeded with mill construction and the installation of machinery at its property in Joutel Township in northwestern Quebec; production began toward the end of 1973.

Gold production in Ontario was 1,019,303 oz t compared with 1,133,987 in 1971. Gold produced from lode mines, which accounted for 92.1% of the provincial total, decreased by 10.1% from 1971.

Virtually all gold produced in the Prairie Provinces was recovered as a by-product from the mining of base-metal ores. Production in 1972 was 68,562 oz t compared with 56,102 in 1971. The settlement of a strike at the Flin Flon and Snow Lake plants of Hudson Bay Mining and Smelting Co., Limited in Manitoba was responsible for most of the increase.

With the exception of a small amount of gold recovered from placer deposits in the central part of the province and in the Atlin district, all gold produced in British Columbia in 1972 was recovered as a by-product of base-metal mines, mainly from the treatment of copper ores. Total by-product gold production was 122,159 oz t compared with 65,760 in 1971. Copper producers coming into production in the latter part of 1971 and in 1972 were responsible for the increase in gold production.

The Yukon reported a sharp decrease in gold production in 1972, dropping to 4,079 oz t in 1972 compared with 14,473 oz t in 1971. Whitehorse Copper Mines Ltd. completed an underground development program and resumed operations in December. This property has been a substantial producer of by-product gold in the past.

In the Northwest Territories, production of gold decreased to 307,479 oz t from 308,339 the previous year. Five gold mines, all near Yellowknife, were in production in 1972.

Lode gold mines accounted for 76.5% of the total gold produced in Canada compared with 79% in 1971. Gold recovered as a by-product from base-metal mining accounted for 23.3% and placer mining 0.2%. Ontario continued to be the largest gold-producing province, accounting for 49.0% of the total, followed by Quebec with 25.9% and the Northwest Territories with 14.8%. Canada ranked third in world production of gold in 1972 behind the Republic of South Africa and the Soviet Union.

Silver. Canadian production of silver in 1972 was 44,792,209 oz t, a decrease of 2.3% from 1971 (Table 12.15). Canada ranked as the world's leading producer of silver.

Silver was refined at six locations in Canada. Canadian Copper Refiners Limited at Montreal East, Quebec, was again Canada's largest producer of refined silver recovered from the treatment of anode and blister copper. The silver refinery of Cominco Ltd. at Trail, BC, was the second-largest producer, recovering by-product silver in the processing of lead and zinc ores and concentrates. Other producers of refined silver were The International Nickel

Company of Canada, Limited at Copper Cliff, Ont. (from nickel-copper concentrates) and the Royal Canadian Mint at Ottawa (from gold bullion). At Belledune, NB, Brunswick Mining and Smelting Corporation Limited recovered by-product silver bullion from lead-zinc concentrates treated in a blast furnace. One silver refinery, owned by Kam-Kotia Mines Limited at Cobalt, Ont., closed in February 1972.

Silver production in the Atlantic Provinces dropped 21.1% in 1972 from the previous year. Silver output in Quebec recovered from base-metal and gold ores, was substantially lower in 1972 than in 1971. Reduced output from Manitou-Barvue Mines Limited near Val d'Or, which was shut down for most of the first half of 1972, accounted for much of the decrease.

Ontario was the leading silver-producing province with 43.7% of Canada's production in 1972. The largest producer in Canada was Ecstall Mining Limited, which recovered 13 million oz t of silver from lead, zinc and copper concentrates at its Kidd Creek mine near Timmins.

In Manitoba and Saskatchewan most of the silver continued to come from 10 base-metal mines operated by Hudson Bay Mining and Smelting Co., Limited near Flin Flon, Manitoba.

Base-metal ores continued to be the main source of British Columbia's mine output of silver. Cominco Ltd., the province's major silver producer, recovered silver from the lead-zinc-silver ores of its Sullivan mine in southeastern British Columbia and from purchased ores and concentrates. Mill tune-up operations began in March 1972 at the silver-zinc-copper-lead property of Nadina Explorations Limited, 28 miles south of Houston.

Sharply increased silver production in 1972 in the Northwest Territories resulted from much higher output by Terra Mining and Exploration Limited. Terra and Echo Bay Mines Ltd., which operate silver-copper properties near Port Radium on the east shore of Great Bear Lake, were the principal silver producers in the Northwest Territories.

A decrease of 13.2% in silver production in 1972 in the Yukon Territory resulted from lower outputs at the zinc-lead-silver properties of Anvil Mining Corp. Limited and United Keno Hill Mines Limited.

Uranium. Canadian uranium shipments rose 18.8% in 1972 to 4,881 tons of uranium oxide (U_3O_8) (Table 12.16). The bulk of it came from the Elliot Lake area of Ontario where Denison Mines Limited and Rio Algom Mines Limited recover uranium from quartz-pebble conglomerates. Eldorado Nuclear Limited, Canada's third largest producer, recovers uranium from pitchblende occurring in vein-type deposits near Uranium City, Sask. Denison operated its mill at about 70% of its nominal 6,000 ton-a-day capacity. Rio Algom operated its Quirke mill at its full 4,500 ton-a-day capacity during 1972. The New Quirke mine is now supplying the mill's total feed and is operating at about 6,500 tons a day, well in excess of its original design capacity. In Saskatchewan, Eldorado continued operating its 1,800 ton-a-day mill at about half capacity.

Uranium exploration activity in Canada was minimal in 1972. Perhaps the only significant Canadian development occurred when Mokta (Canada) Ltée confirmed in late 1972 that it had outlined a small but rich uranium orebody at Cluff Lake in the Carswell dome area of Saskatchewan.

Gulf Minerals Canada Limited proceeded with work at its Rabbit Lake property, near the southwestern end of Wollaston Lake in northern Saskatchewan. Construction of the mill, capacity 4.5 million lb. of uranium oxide a year, began in 1973 with first production scheduled for 1975.

Denison amalgamated with Stanrock Uranium Mines Limited which produced uranium from an adjoining property until 1970 when lack of markets forced it to close.

In June 1971 the federal government formed a new Crown company, Uranium Canada, Limited (UCAN), to act as its agent in the acquisition and future sales of the joint uranium stockpile established earlier in the year by agreement between the federal government and Denison. Subsequently UCAN's role was broadened to give it authority over future sales from the general government stockpile.

In August 1972 the Minister of Energy, Mines and Resources issued a directive to the Atomic Energy Control Board respecting minimum selling prices and volumes of sales to export markets to be considered in the granting of uranium export permits. The directive was made in an effort to stabilize the current uranium marketing situation and to promote the development of the Canadian uranium industry.

In November 1972, Denison and UCAN confirmed a sales agreement valued at nearly \$60 million, involving delivery of 8.9 million lb. of uranium oxide to a group of Spanish utilities over the period 1974 to 1977. The sale will completely dispose of the 3,200-ton uranium oxide stockpile accumulated by the companies between 1971 and 1974 as well as a portion of the federal government's general stockpile. This brought total Canadian uranium commitments made since 1966 to over 73,000 tons of uranium oxide, an estimated 9,500 tons of which had been delivered by the end of 1972.

In February 1972, Canada signed an agreement with the International Atomic Energy Agency (IAEA) providing for IAEA inspection of Canadian nuclear installations. The safeguard inspections will not extend to the mining and milling stage of the uranium industry, but will begin at the "product-output" stage of uranium refining. Canada is the first "near-nuclear weapon" state to enter into an IAEA safeguards agreement, as required under the terms of the Non-Proliferation Treaty.

Molybdenum. Canadian shipments of molybdenum in 1972 amounted to 28.5 million lb. valued at \$44.1 million. Shipments increased 25.7% in volume and 14.9% in value compared to the previous year. Canada remained the second largest producer in the world (excluding the Sino-Soviet bloc) with 18.7% of world production.

Before 1969 production of molybdenum as a co-product or by-product from large tonnage and low-grade copper-molybdenum deposits was not significant. Production cutbacks and closing of primary molybdenum mines during 1971 and 1972 and the opening of large copper deposits in which molybdenum is a secondary mineral have increased the proportion of molybdenum recovered as a secondary mineral to approximately one half of the total Canadian production.

Quebec produced a small amount of molybdenum from two mines in 1972. Gaspé Copper Mines, Limited produced 206,000 lb. of molybdenum in concentrate as a by-product of its copper operation. Mill capacity will triple to 34,000 tons a day and production of molybdenum should increase substantially. Molybdenite Corporation of Canada Limited closed its mine and mill near Lacorne, Que. in September 1972 after receiving financial assistance from the provincial government for about one year.

In British Columbia shipments increased 28.1% over the previous year. British Columbia was the largest producer in Canada with 98.4% of Canada's shipments in 1972. Brenda Mines Ltd. near Kelowna produced 10 million lb. of by-product molybdenum in 1972 of which 6.6 million lb. were sold and 3.4 million lb. were added to inventory. British Columbia Molybdenum Limited, a primary molybdenum producer, ceased production in April 1972 at its mine near Alice Arm. Endako Mines Division of Canex Placer Limited at Endako is the largest primary molybdenum producer in Canada. In an effort to balance production and demand and reduce a large stockpile of concentrates Endako reduced production in 1971 and 1972 to 75% and 50% of the 1970 production levels respectively. Lornex Mining Corporation Ltd. near Ashcroft produced its first by-product molybdenum concentrates in August. Full production commenced in October. Utah Mines Ltd. near Port Hardy produced 1.9 million lb. of by-product molybdenum in its first full year of operation. Red Mountain Mines Limited closed its molybdenum operations at Red Mountain. Gibraltar Mines Ltd. in the Cariboo District began production in 1972; recovery of molybdenum from molybdenum-copper ores was found to be uneconomic in initial tests and this portion of the mill will be placed on standby until it becomes economic to recover the quantity of molybdenum in the ore.

Platinum metals. Production of platinum metals in Canada amounted to 406,048 oz t valued at \$34.6 million in 1972. Production declined 14.5% in volume and 13.0% in value compared to the previous year. Canada produces platinum metals as a by-product of nickel refining. When nickel matte is electrolytically refined, the platinoids — platinum, palladium, rhodium, ruthenium, iridium and osmium — are precipitated in the electrolytic tanks as a sludge. The sludge is purified and sent to refineries in Britain and the United States for recovery of the platinum metals. During 1971 major Canadian nickel producers reduced nickel output in an attempt to balance supply and demand with the result that Canadian platinoid production also declined; this situation persisted in 1972.

The decision of the automotive industry to use platinum and palladium as catalysts in emission control devices has raised expectations for increased world production of these two metals.

Cobalt. Canadian production of cobalt in 1972 amounted to 3.4 million lb. valued at \$8.3 million, decreases of 22.5% in volume and 11.8% in value compared to the previous year. Cobalt is recovered as a by-product of nickel-copper ores and to a lesser extent from silver-cobalt ores.

Canada's leading producer, The International Nickel Company of Canada, Limited (INCO), recovers cobalt in the form of crude oxide at its nickel refineries at Port Colborne, Ont. and Thompson, Man. Cobalt oxide and salts are also recovered at INCO's nickel refinery at Clydach, Wales. INCO curtailed production because of large nickel stocks, a factor in lower Canadian production of cobalt in 1972. Falconbridge Nickel Mines Limited ships nickel-copper matte from its mine at Falconbridge, Ont. to Kristiansand, Norway for refining. A fire in the cobalt section of the Norwegian refinery forced Falconbridge to stockpile unrefined cobalt during 1972. Sherritt Gordon Mines, Limited recovers cobalt at its hydro-metallurgical refinery at Fort Saskatchewan, Alta. Sherritt Gordon processes concentrate from its nickel-copper mine at Lynn Lake, Man., but most of the cobalt produced is recovered from nickel-copper concentrates purchased from mines in Australia and New Caledonia. Giant Mascot Mines Limited, British Columbia's only mine producer of by-product cobalt, shipped concentrates to Fort Saskatchewan for refining.

Cobalt supply is expected to be more than adequate to meet demand over the next few years.

Columbium (niobium) and tantalum. Canadian production of columbium as columbium pentoxide (Cb_2O_5) was 3.9 million lb. valued at \$3.9 million in 1972 compared with 2.3 million lb. valued at \$2.3 million in 1971.

St. Lawrence Columbium and Metals Corporation, with a mine, mill and concentrator near Oka, Que., is Canada's only producer of columbium and has one of only two mines in the world that produce columbium in pyrochlore concentrates as a primary product; the other larger operation is near Araxa, Brazil.

A strike lasting one month reduced production at St. Lawrence in 1972. Copperfields Mining Corporation and Quebec Mining Exploration Company (SOQUEM) continued development of the St-Honoré columbium pyrochlore deposit some seven miles north of Chicoutimi, Que. The company reported that pilot plant testing of bulk samples, completed during 1972 by the Department of Mines, indicated that the quality of columbium oxide concentrates produced is at least equal to that of existing producers. A feasibility study, including mine planning and plant design, is in preparation.

Shipments of tantalum pentoxide (Ta_2O_5) in 1972 were 41,120 lb. valued at \$246,658, substantially below the 1971 levels. The United States, which represents 75% of Canada's tantalum export market, released 487,000 lb. of tantalum contained in tantalum and columbium pentoxides from its stockpile of strategic materials; combined with customer's accumulated stocks of tantalum concentrates and tantalum metal this action seriously reduced shipments in 1972.

Tantalum Mining Corporation of Canada Limited (TANCO) at Bernic Lake, Man. was Canada's sole producer. Because of a weak world market for tantalum concentrates, TANCO stockpiled most of its 1972 production in anticipation of firmer market conditions with improved prices.

Tungsten. Canadian production (shipments) was 4.4 million lb. of tungsten trioxide (WO_3) in scheelite concentrates in 1972, compared with 4.6 million lb. in 1971. Mine production came from two producers: Canada Tungsten Mining Corporation Limited's mine, mill and concentrator at Tungsten in the Northwest Territories, about 135 miles north of Watson Lake, and Canex Placer Limited's mine, mill and concentrator near Salmo in southeastern British Columbia. Canex, which commenced production of tungsten concentrates in October 1970, ceased operations in September because of depleted reserves of tungsten ore.

Amax Exploration, Inc., a subsidiary of American Metal Climax, Inc., identified a scheelite deposit in the Yukon, 240 miles northeast of Whitehorse. Over 30 million tons with an average grade of 0.9% tungsten trioxide have been indicated. Additional drilling and bulk sampling are necessary before the mineralization is fully outlined and tonnage and grade can be more accurately estimated.

Cadmium. Cadmium production in 1972 was 4.3 million lb. valued at \$11.0 million compared

to 4.1 million lb. valued at \$7.9 million in 1971. Most of the zinc ores in Canada contain cadmium in quantities varying from 0.001% to 0.067% recoverable cadmium, and zinc concentrates contain up to 0.7% cadmium. The largest mine production comes from Kidd Creek mine near Timmins, Ont., followed by Pine Point Mines Limited in the Northwest Territories, Cominco Ltd. in British Columbia, Hudson Bay Mining and Smelting Co., Limited in Saskatchewan and Manitoba and the Noranda group of companies in Ontario, Quebec and New Brunswick.

Cadmium is recovered as a by-product from the smelting and refining of zinc ores and concentrates. Metallic cadmium is recovered as a by-product at the electrolytic zinc plants of Cominco Ltd. at Trail, BC, Hudson Bay Mining and Smelting Co., Limited at Flin Flon, Man. and Canadian Electrolytic Zinc Limited at Valleyfield, Que. The Smelting Division of Brunswick Mining and Smelting Corporation Limited, recovered small amounts of cadmium at its Belledune, NB, Imperial Smelting Process lead-zinc smelter until January 1972 when it began converting the smelter to treat only lead concentrates. Small initial quantities were also recovered at Ecstall's new plant near Timmins. In 1972 metallic cadmium produced in Canada totalled 2.3 million lb. compared with 1.6 million lb. in 1971.

Selenium and tellurium. Production of selenium in 1972 decreased to 582,060 lb. valued at \$5.2 million from 718,440 lb. valued at \$6.5 million in 1971. Production of tellurium increased to 45,649 lb. valued at \$271,155 from 24,000 lb. valued at \$148,000 in 1971. Selenium and tellurium are recovered from the anode muds resulting from the electrolytic refining of copper at the plants of Canadian Copper Refiners Limited at Montreal East, Que. and The International Nickel Company of Canada, Limited at Copper Cliff, Ont.

Magnesium. Canadian production of magnesium was 5,924 tons valued at \$4.5 million. Production was down substantially from 10,353 tons in 1970 and 7,234 tons in 1971. Exports of Canadian magnesium metal have entered the United States duty-free under the Canada—United States Defense Production Sharing Program but this program has recently operated on a reduced scale. The decrease in production is mainly attributable to the curtailment in this program. Only in certain highly-pure items can the Canadian product find a market in the United States. Exports of Canadian magnesium ingots face a 20% tariff when entering the United States domestic market whereas the comparable Canadian tariff is 5%. Releases from the General Services Administration stockpile in the United States totalled 7,737 tons of magnesium metal in 1972, creating additional marketing problems for Canadian magnesium.

The only Canadian producer of primary magnesium is Chromasco Corporation Limited. This company has operated a mine and smelter at Haley, Ont., 50 miles west of Ottawa, since 1942.

12.1.3 Industrial minerals

Asbestos. Canadian shipments of asbestos fibre were 1.7 million tons valued at \$206.1 million in 1972, compared with 1.6 million tons valued at \$204.0 million in 1971 (Table 12.17). All of the Canadian production consists of chrysotile and 81% of it comes from Quebec, over 6% from British Columbia, 6% from the Yukon, 4% from Newfoundland and over 2% from Ontario.

Canada is the world's largest exporter of asbestos, shipping over 90% of its production to more than 70 countries. The United States is the largest market, followed by Japan, Britain, the Federal Republic of Germany and France. These five countries absorbed about 70% of Canadian exports, which totalled approximately 1.57 million tons in 1972.

Total world demand for asbestos fibre weakened in 1972. However a good market in the United States was largely responsible for a slight increase in shipments by Canadian producers. A weaker demand in Western Europe and Japan resulted in less emphasis on completing some new Canadian mine projects, but demand for fibre in these markets is expected to increase. This prompted some expansion of existing capacity and continued development of new Canadian projects.

In Quebec, near Deception Bay, Ungava, production commenced at the new Asbestos Hill mine owned by Asbestos Corporation Limited and full productive capacity of 100,000 tons of fibre is expected to be reached by 1974. Canadian Johns-Manville Company,

Limited completed about 75% of its plant expansion and relocation program as part of a \$75 million project at the Jeffery mine and mill. A constant annual output of a minimum 600,000 tons of fibre will be maintained and the expanded facilities will allow recovery of some fibre from pre-1930 tailings. Bell Asbestos Mines, Ltd. continued work on a long-range modernization program which may result in increased production capacity. A production-sized shaft has been sunk to a depth of 1,450 ft near the open pit; underground work proceeded from the shaft with a view to large-scale underground mining.

Evaluation of several potential producers in Quebec continued in 1972. McAdam Mining Corporation Limited's property about 20 miles east of Chibougamau, now under working option to Rio Tinto Canadian Exploration Limited, is being evaluated in an underground work program. Abitibi Asbestos Mining Company Limited reported that work on a pilot plant commenced at its property in Maizerets Township, 50 miles north of Amos. Pathfinder Resources Ltd. and Pan Ocean Oil Ltd. are negotiating an agreement that may result in the development of Pathfinder's Lili asbestos property, 80 miles east of Montreal.

In British Columbia, Cassiar Asbestos Corporation Limited, Cassiar, shipped over 100,000 tons of fibre following its 1971 mill expansion to an annual capacity of 120,000 tons of fibre. Recent drilling confirmed that there are sufficient reserves for at least another 20 years of mining.

In the Yukon Territory over 100,000 tons of fibre was shipped from Cassiar's Clinton Creek mine.

Advocate Mines Limited, Newfoundland's only asbestos producer, maintained fibre shipments at 69,000 tons.

In Ontario total production by Hedman Mines Limited and Johns-Manville Mining and Trading Limited's Reeves mine decreased 19% from 1971. This was partly the result of a one month suspension of operations at the Reeves mine because of poor market conditions and a large stockpile of available fibre.

United Asbestos Inc. and Allied Mining Corporation propose to bring into production the asbestos property owned by Allied in Midlothian Township, 43 miles south of Timmins, Ont.

Potash. Canadian production in 1972, all from Saskatchewan, amounted to 3.9 million tons of potassium dioxide (K_2O) equivalent (Table 12.18). The installed annual capacity is the world's largest at 8.32 million tons of potassium dioxide equivalent. All 10 mines were in operation throughout 1972, with the exception of Cominco Ltd.'s mine. Cominco's mine re-opened in September after flooding of the underground workings forced a 25-month shutdown. Effective June 1, 1972 the Saskatchewan government began collecting a proration fee of 60 cents a ton of potassium chloride. The Saskatchewan government controlled production under the Potash Conservation Regulations, 1969 for the third consecutive year and all sales were subject to a floor price of 33.75 cents per unit of potassium dioxide.

In New Brunswick an agreement was reached between the province and Potash Company of America (PCA) for the right to explore for potash and salt in a 224-sq-mile area near Sussex. Potash was discovered in the Sussex area during a federal-provincial exploration program in 1971. Demand for potash continued to increase in 1972.

Salt. Salt production in Canada in 1972 remained almost unchanged from the previous year. Canadian shipments of salt amounted to 5.4 million tons valued at \$40.1 million (Table 12.19). About 75% of total shipments were rock salt that is used for snow and ice control on city streets and highways and for chemical manufacturing. The remainder is fine vacuum salt and salt as brine that is used for producing caustic soda and chlorine.

There are three rock salt mines, one in Nova Scotia and two in Ontario. Salt is also produced as a by-product of potash mining in Saskatchewan. Fine salt evaporator plants and brining operations are located in Nova Scotia, Ontario, Manitoba, Saskatchewan and Alberta.

A joint federal-provincial exploration program discovered a potash-salt deposit in Kings County, NB, in 1971. In August 1972 Quebec Mining Exploration Company (SOQUEM) announced discovery of a large salt deposit in the Magdalen Islands, 50 miles north of Prince Edward Island.

Sulphur. Canadian sulphur shipments in all forms in 1972 amounted to 4.4 million tons valued at \$25.2 million (Table 12.20). Shipments increased 26.8% in volume but decreased 7.1% in value compared to the previous year.

Canadian sulphur is obtained from three sources: sour natural gas and petroleum, which produce elemental sulphur, smelter gases which produce sulphuric acid, and from pyrite concentrates which are used in the manufacture of sulphuric acid. Small amounts of elemental sulphur are recovered as a by-product of electrolytic refining of nickel sulphide matte and a small quantity of liquid sulphur dioxide is produced from pyrites and smelter gases. Eighty-two percent of Canadian sulphur shipments in 1972 were in elemental form, nearly all from sour natural gas in western Canada.

Dramatic growth over the last 10 years in the Canadian sulphur industry is due almost entirely to expanded exploitation and treatment of sour natural gas, principally in Alberta. Canadian production of sulphur in all forms in 1960 was 1 million long tons, with elemental sulphur making up only one quarter of the total. In 1972 total sulphur production is estimated at 7.34 million long tons, 6.76 million tons in elemental form. Since 1968, Canada has been the world's largest supplier of elemental sulphur.

Gypsum. In 1972 Canadian production of crude gypsum increased to 8.1 million tons (Table 12.21), 70% of which was exported to the eastern United States. Exports were mainly from Nova Scotia and Newfoundland quarries although some tonnage was shipped into the north-western United States from British Columbia.

Nine companies produced crude gypsum in Canada in 1972 at 15 locations, while five companies manufactured gypsum products at 17 locations. Production of gypsum in Canada is closely related to the building construction industry, particularly in the residential building sector, in both Canada and the eastern United States.

Nepheline syenite. Nepheline syenite was produced from two operations on Blue Mountain, 25 miles northeast of Peterborough, Ont. In 1972 shipments were 559,483 tons, an increase of 8.2% over 1971 (Table 12.22). The value of shipments in 1972 decreased 4.9% to \$5.9 million from \$6.2 million in 1971. Exports accounted for 78% of the total shipments. Sales to the United States, which accounted for 95% of Canada's total exports, increased 8%. Nepheline syenite is preferred to feldspar as a source of essential alumina and alkalis in glass manufacture. Other uses include the manufacture of ceramics, enamels and as a filler in paints, papers, plastics and foam rubber.

Structural materials. The value of all construction undertaken in Canada in 1972 was roughly \$16.3 billion. Shipments of structural materials, including cement, sand and gravel, stone, clay and clay products and lime, were roughly \$569.7 million or 8.9% of Canada's total value of mineral production.

Canadian production of cement in 1972 was 10 million tons, an increase of 10.0% over the previous year (Table 12.23). Current production capacity is 14.9 million tons a year of cement. Cement was produced in all provinces except Prince Edward Island with Ontario and Quebec accounting for 69.6% of the Canadian total. Independent Cement Inc. completed a 220,000 ton-a-year plant at Joliette, Que. in 1972. Late in 1973 Canada Cement Lafarge Ltd. opened a 1.1 million ton-a-year plant at Bath, Ont. and expanded its plant at Havelock, NB by 100,000 tons a year. In addition, Lake Ontario Cement Limited expanded its capacity at Picton, Ont. by adding two roller mills in 1973.

Production of sand and gravel in 1972 was 225.2 million tons valued at \$178.1 million (Table 12.24). Sand and gravel must be quarried, screened, washed, stockpiled and transported in large volumes to compensate for the low unit value received. Transportation and handling often double the plant cost, making it necessary to establish plants close to major consuming centres. Urban expansion has greatly increased the demand for sand and gravel, but many plants and quarries have been overrun by urban spread. Sand and gravel are used as fill, granular base course and finish course and fine aggregates for concrete manufacture; coarse aggregate in asphalt production and fine aggregate in mortar and concrete blocks.

Production of stone in 1972 was 80.2 million tons valued at \$103.3 million (Table 12.25). There are three types of stone products: dimension stone for use as building and ornamental stone; crushed stone for use as building blocks and monuments, limestone for cement, lime and metallurgical use, building panels, riprap, cut stone, aggregate in concrete and asphalt, railroad ballast and road metal; and pulverized stone for use as an asphalt filler and in agriculture. Dimension stone accounts for roughly 1% of total production, crushed stone as a construction material for about 80% and the remainder is mainly used in the iron and steel, chemical and allied industries.

Shipments of clay and clay products in 1972 were valued at \$52.3 million, a 7.7% increase over the previous year (Table 12.26). Deposits of clay for use in the manufacture of papers, refractories, high quality whitewares and stoneware products are scarce in Canada. Consequently china clay (kaolin), fire clay, ball clay and stoneware clay are mostly imported. In Canada common clays and shales, higher in alkalis and lower in alumina than the other clays, are used to manufacture brick and tile products.

12.1.4 Oil and natural gas

Canadian production of crude oil and natural gas liquids in 1972 increased 15.9% to 671 million barrels (bbl). Crude oil output amounted to 562 million bbl or 1.5 million barrels a day (b/d) (Table 12.27). Gas plant production of natural gas liquids totalled 109 million bbl or 299,000 b/d. Natural gas production rose 16.6% in 1972 to 2,913,047 million cubic feet (MMcf) or 7,981 million cubic feet a day (MMcf/d) (Table 12.28).

In the face of record production levels Canada's liquid hydrocarbon reserves, which include conventional crude oil and natural gas liquids, declined for the third consecutive year. Estimating production of crude oil and natural gas liquids at 621 million bbl in 1972, the Canadian Petroleum Association (CPA) calculated that proven remaining reserves had declined by 439 million bbl to a year-end total of 9,723 million bbl. This comprises 8,020 million bbl of crude oil and 1,703 million bbl of natural gas liquids. Reserves added in 1972 totalled 182 million bbl and of this amount 110 million bbl were attributable to revisions, 45 million bbl to extensions of established fields and 27 million bbl to new discoveries. Using the 1972 level of production, the life index for conventional crude oil and natural gas liquids dropped to 15.6 years, the lowest it has been since the discovery of the Leduc field. Proven remaining marketable reserves of natural gas in Canada declined in 1972, the first recorded decline since the CPA began compiling estimates in the early 1950s. Proven reserves at the end of 1972 amounted to 52,935,782 MMcf, down 2,526,068 MMcf, or 4.6%, from the end of 1971. The decline resulted from low additions from new discoveries and record high production and consumption levels. Significant gas discoveries were reported in the Mackenzie Delta, the Arctic islands and off the east coast, but potential reserves in these areas are not included in the CPA estimates since no transportation facilities are available to move the gas to market.

Refinery expansion slackened in 1972 following the record growth rate in the previous year. No new refineries were built. However, two major refineries were under construction, one in Newfoundland which was completed in 1973 and another in Edmonton with a completion date of 1974.

Alberta. Crude oil production declined in all provinces except Alberta, which exceeded last year's production by 19.6%. Alberta production, at 1.2 million b/d, accounted for 79% of the total Canadian crude oil output in 1972. Synthetic crude oil production from the Great Canadian Oil Sands Limited's plant at Fort McMurray contributed 51,000 b/d. The Alberta Energy Resources Conservation Board (AERCB) estimated that in 1971 adjusted wellhead capacity was 1.65 million b/d; therefore about 74% of the province's capability was being used at the end of 1972. Since 1968 Alberta's unused productive capacity has declined from 56% of the then current production rate to 26% in 1972.

Exploratory and development drilling footages were increased in 1972 partly because of the incentive provided by higher prices for oil and gas. Both footages and number of wells increased as 2,719 wells were drilled with an aggregate footage of 10.05 million ft compared with 2,014 wells and 7.98 million ft in 1971. Many of the wells were drilled in the southern part of the province where shallow gas deposits are being explored and developed. Despite increased exploration drilling no new oil discoveries of any substance were made during 1972.

Alberta continued to supply four fifths of the marketable gas in Canada. Almost half of the gas development wells drilled were successful. Much of the development drilling was in the producing fields of southeastern Alberta. Three separate drill locations in the Ricinus area, 65 miles northwest of Calgary, have indicated potentially large reserves.

Early in 1973 Great Canadian Oil Sands Limited (GCOS) applied to the AERCB to increase its allowable production of synthetic crude oil to 65,000 b/d from its present allowable rate of 45,000 b/d. The Great Canadian Oil Sands Limited's recovery plant is located near Fort

McMurray, Alta. The Alberta government decided not to establish a long-term policy for oil sands development in the immediate future, but to give priority to developing a second tar sands plant. At about the same time Syncrude Canada Ltd. asked the AERCB for deferment from January 1, 1977 to January 1, 1978 of the stipulated date of start-up of its proposed plant near Fort McMurray. Estimated capital cost of the plant has been revised upward from \$650 million to \$744 million. Syncrude Canada Ltd. is owned jointly by Atlantic Richfield Canada Ltd., Canada-Cities Service, Ltd., Imperial Oil Limited and Gulf Oil Canada Limited. Syncrude's present scheme calls for the construction of a plant to produce 125,000 b/d of synthetic crude oil and 5,500 b/d of residual fuel oil.

The announcement of Alberta's new energy policy was an important event for Canada's oil and gas industry in 1972. On July 31, 1972 the Alberta government introduced a plan giving the oil companies the option of paying a tax on proven oil reserves or an increased royalty amounting to 5% over the existing rate of 16%. The new schedule took effect on January 1, 1973 and is designed to provide an additional \$70 million in provincial tax revenues from the producing sector of the oil and gas industry.

Saskatchewan. Saskatchewan produced 238,000 b/d of liquid hydrocarbons in 1972, which was 15.4% of the total Canadian production but 4,579 b/d less than in 1971. Total footage drilled in 1972 was 1.81 million ft, which was the same amount as in 1971. The Viewfield Mississippian pool in southeastern Saskatchewan remained the most important area for development drilling. Further drilling expanded the field's proven reserves. No new discoveries were made in 1972.

Saskatchewan produced 2.4% of Canada's natural gas. Drilling was mainly confined to known gas fields. No new discoveries of natural gas were reported in 1972.

British Columbia. British Columbia produced 4.3% of the national total of liquid hydrocarbons but production declined by 4,000 b/d to 65,000 b/d. Exploratory drilling in British Columbia increased 35% to 301,693 ft in 1972; however, development drilling declined. No commercial discoveries of oil were made in 1972.

British Columbia produced 15% of Canada's natural gas in 1972. Exploratory gas discoveries were almost double the 1971 level and development gas well completions increased by 50%. Reserves in existing fields were expanded significantly in 1972. Drilling continued in an attempt to outline a new productive region 100 miles south of Fort St. John. Further drilling was under way to establish the gas reserves necessary to justify a pipeline connection to the area.

Manitoba. Manitoba produced a small amount of liquid hydrocarbons and no natural gas. No development or exploration was done during the year except the drilling of two wildcat wells.

Yukon Territory, Northwest Territories and Arctic islands. Little oil was produced in 1972. Total exploratory drilling in 1972 increased 21% to 574,102 ft. An oil discovery was made in the Mackenzie Delta on Richards Island. Two previous discoveries in the area on the Tuktoyaktuk Peninsula were not developed. Four gas-condensate discoveries were made in the area in 1972, some of which are likely to be of major significance. Panarctic Oils Ltd. made its first oil discovery on Ellesmere Island in 1972. The find was proved to be non-commercial but it confirms the presence of oil. Panarctic also reported a light oil discovery on Thor Island. Further drilling will follow to see if the zone encountered is on the edge of a larger reservoir.

Natural gas production increased significantly as a result of a pipeline extension from northeastern British Columbia to the Pointed Mountain fields in the southwest corner of the Territories. Work continued in the Mackenzie Delta and the Arctic islands. In the Mackenzie Delta, much of the drilling activity early in the year took place around the west side of Richards Island where a gas discovery well was completed late in 1971. Numerous gas discoveries were reported by a number of companies in the area. In the Arctic islands, Panarctic drilled two wells to delineate the limits of a reservoir on Melville Island that indicate a field of major proportions. Further gas discoveries were also reported on Melville and King Christian islands. No new discoveries were made in areas south of the Mackenzie Delta.

It is estimated that a proven natural gas reserve of 15 trillion cubic feet (MMMMcf) is required to warrant the construction of a pipeline from the Mackenzie Delta and 35 MMMMcF to warrant the construction of a pipeline from the Arctic islands.

Eastern Canada. A new wet gas discovery was made seven miles southwest of a previous discovery on the western tip of Sable Island off Canada's east coast. The new well, Mobil Tetco Thebaud P-84, recovered significant flows of gas from five separate zones, some of which also produced condensate. The team of Mobil Oil Canada, Ltd. and Texas Eastern Transmission Corporation is currently using a drilling platform on the western end of the Island to develop the oil and gas field they discovered in 1971. In addition, there were four semi-submersible drilling rigs operating off the east coast at the end of 1972.

Ontario produced small amounts of oil and gas. Drilling declined 8% to 232,002 ft in 1972. A few small oil discoveries were made and some gas wells were completed during the year. Exploration continued in the Hudson Bay area with further off-shore drilling expected.

12.2 Government aid to the mineral industry

12.2.1 Federal government aid

Federal assistance to the mining industry takes the form of the provision of detailed geological, geophysical, topographical, geodetic, geographical and marine data which are of fundamental importance to the discovery and development of the mineral resources of Canada; the provision, through laboratory and pilot-plant research, of technical information concerning the processing of ores, industrial minerals and fuels on a commercial scale; certain tax incentives; and financial and technical assistance to the gold-mining industry under the Emergency Gold Mining Assistance Act.

The Department of Energy, Mines and Resources. The federal Department of Energy, Mines and Resources was created by the Government Organization Act on October 1, 1966 (RSC 1970, c.E-6). Apart from its administrative establishments, the Department is made up of three Sectors — Science and Technology, Mineral Development and Energy Development — each headed by an Assistant Deputy Minister and each aiding the Canadian mineral industry according to its assigned responsibility.

The Science and Technology Sector contains the Mines Branch, the Geological Survey of Canada, the Surveys and Mapping Branch, the Earth Physics Branch, the Polar Continental Shelf Project, the Canada Centre for Remote Sensing, and the Explosives Division.

The Mines Branch consists of a large laboratory and pilot-plant complex and conducts research into methods of extracting and processing minerals and fuels. Emphasis is placed on recovery techniques for ores and minerals with low-grade impurities or complex mineral composition. Fuels research includes a comprehensive evaluation of the quality of Canada's fossil fuels and the development of refining methods for the low-grade, high-sulphur petroleum of the Athabasca oil sands. Mining research is aimed at maximizing ore production with minimum physical hazard and at minimum cost. A five-year project will greatly lower waste rock production and costs by improving the design of the walls of open-pit mines. Research is also being conducted on coal beneficiation and carbonization. In the related area of pyrometallurgy, the extraction of metal by heat, applied research is concentrated on the development of a shaft electric furnace for smelting iron ore. In the mineral sciences, the Mines Branch carries out physical, chemical, crystallographic and magnetic studies to determine mineral characteristics important to extraction and processing methods. The Branch also produces standard reference ores and metals needed by mining and metallurgical companies. In metals research, in addition to improving traditional techniques for metal forming, attention is focused on ensuring the structural soundness of metal pipelines for use in the Arctic. Another program is directed toward the development of methods of mineral recovery that will reduce pollution problems. Research is conducted on the development of chemical methods of ore processing that avoid the sulphur dioxide production of the smelting process and the conversion of mineral waste into useful materials such as fillers and ceramics.

The Mines Branch is assisted in its work by the National Advisory Committee on Mining and Metallurgical Research, comprising senior executives and researchers from industry, government and universities.

The Geological Survey of Canada maps and studies the geology of Canada. It is the major organization engaged in this work in Canada and its studies extend to all provinces and territories. Its activities are designed to support two programs of the federal Department of Energy, Mines and Resources: the Mineral and Energy Resources Program and the Earth Sciences

Program. A principal aim of the former is to ascertain the mineral and energy resource potential available to Canada and thus the Survey expends considerable effort in such fields as estimating the potential abundance and probable distribution of mineral and fuel resources. This is done by providing the necessary systematic geological framework, by defining those settings favourable to the occurrence of the various types of mineral commodities and fuels and by comparing these, by appraising foreign mineral and fuel resources and by other studies. The Earth Sciences Program includes activities designed to assist in effective use and conservation of resources and in the management and preservation of man's environment throughout Canada. To assist in this, the Geological Survey provides geologically based information on land resources and terrain performance, which is derived from geological, geomorphic, geophysical, geotechnical and related studies of earth and rock materials, land forms and associated dynamic processes.

In support of these activities, the Survey each year sends about 100 parties into various parts of Canada. The results of its studies are published in memoirs, bulletins, papers, maps and numerous scientific technical journals. Headquarters is in Ottawa but there are several regional offices of which the Institute of Sedimentary and Petroleum Geology in Calgary and the Atlantic Geoscience Centre at Dartmouth are the largest. The former studies the geology of Canada's western and northern sedimentary basins and the latter investigates the deep structure of the continental shelves and the floors of the open ocean.

The Earth Physics Branch carries out much geophysical work of interest to the mineral industry. It studies, collects and publishes, in the form of maps and charts, information on the geomagnetic field in Canada. Most of the information published is obtained from airborne geomagnetic surveys, which have ranged over the whole of Canada and across the Atlantic to Scandinavia. In addition, the Branch maintains a network of 10 permanent geomagnetic observatories, as well as temporary observatories in summer at many widely distributed sites. It also operates a network of 31 seismic stations to assist in the study of the earth's interior and to obtain data for its quantitative assessment of seismic risk throughout Canada. In gravity research, another means of studying the composition of the earth's crust, the Branch is systematically mapping variations in the earth's gravity on a regional basis throughout Canada, including the Arctic and the floors of the Gulf of St. Lawrence and Hudson Bay. The results of all gravity measurements are available in a new gravity map of Canada on a scale of 1:5,000,000 or about 80 miles to the inch, for easy comparison with the new geological and tectonic maps of Canada on a similar scale. Geothermal studies in mines and deep boreholes provide information to the mineral industry on the underground thermal regime, including permafrost.

No mineral development is possible without accurate, large-scale topographical maps. The Surveys and Mapping Branch, in conjunction with the Mapping and Charting Establishment of the Department of National Defence, has completed the topographical mapping of the country at the medium scale of 1:250,000, or about four miles to the inch. About 40% of the larger-scale mapping at 1:50,000 has been completed in the more settled areas and areas of greater economic importance.

The Explosives Division is responsible for the administration of the Federal Explosives Act, which is primarily an Act of public safety to control the manufacture, authorization, storage, sale, importation and transportation by road of explosives.

The Mineral Development Sector is responsible for resource-economic research, program development and policy formulation in the field of non-renewable resources. It conducts fundamental and applied resource-engineering-economic research and field investigations into non-renewable resource problems, policies and programs on a commodity or total industry basis, in a regional, national and international context. The work covers all aspects of the mineral industry from resources through exploration, development, production, processing, transportation and consumption. On the basis of this work, the Sector publishes resource-engineering-economic reports and advises government departments and agencies on non-renewable resource policy matters. Current activities include regional studies of the mineral economy of a number of areas in Canada; assessment of mineral projects in various parts of Canada for which federal support has been requested; mineral resource and mineral reserve studies in a number of mineral commodities and the safeguarding of Canadian mineral interests through participation in international agencies such as the United Nations Lead-Zinc Study Group, the Economic Commission for Europe, the Committee on Natural Resources

on the Economic and Social Council, and the International Tin Council. The Sector administers the Emergency Gold Mining Assistance Act as a means of aiding mining communities largely dependent upon the gold mines. In collaboration with the Canadian International Development Agency and with the support of industry, the Sector sets up training courses for mineral scientists, technologists and economists brought to Canada under the various aid programs, and is advising on mineral projects undertaken by Canada as an aid to developing countries. The Sector publishes an extensive series of reports and other material, and maintains the Mineral Occurrence Index, which is a listing of about 14,000 mineral showings and deposits in Canada that may be consulted by anyone interested.

The Energy Development Sector is primarily a policy-making group with a direct impact on the mining industry. Some specific areas of assistance are considered here. The Sector studies and assesses individual projects and developments relative to each of the energy sources and in terms of interrelationships with other energy sources. It appraises trends in oil and gas exploration and production, transportation, processing and marketing in Canada and on an international scale, and provides information to federal government agencies, industry and the general public on oil and gas developments in Canada and abroad. In the field of uranium, the Sector continues to co-ordinate uranium matters on such subjects as stockpile programs, possibilities of the establishment of uranium-enrichment facilities in Canada and export opportunities. With respect to coal, in addition to its wider role it provides assistance in the form of research and development grants to help improve the quality and utilization of coal, and provides advice on production expansion rates compatible with profitability and projected demand in Canadian and foreign markets. The Sector also administers and manages federal interests in mineral resources off-shore from Canada's east and west coasts and in the Hudson Bay region, as well as federally owned mineral rights in the provinces that become available for disposition.

Tax incentives to the mineral industry. Although mineral industry enterprises are subject to federal income tax, certain benefits granted to them under the Income Tax Act serve as incentives to exploration and development of minerals and to further processing of minerals. Some modifications were made in the tax incentives to the mineral industry in the amended Income Tax Act which became effective on January 1, 1972.

Under the provisions of the amended Act the exemption from income tax for the first three years of operation of new mining ventures terminated at the end of 1973. However initial capital expenditures in a new mining operation on buildings, machinery and equipment and certain community and transportation facilities may be deducted as rapidly as income will permit. Consequently new mining ventures will not be liable for federal income tax until these initial capital expenditures have been recovered. In the case of a major expansion of an existing mine, capital expenditures on buildings and on machinery and equipment also may be deducted immediately.

The operators of oil or gas wells or mines have been able to claim, during the full life of the operation, an automatic depletion allowance equal to one third of the taxable income. In general the effect of the automatic percentage depletion allowance is to reduce the tax otherwise payable by one third. This will continue to apply until the end of 1976. Beginning in 1977 the automatic percentage depletion allowance will be replaced by an earned depletion allowance. The rate at which this allowance may be deducted annually will remain at one third of the taxable income but the total amount of the allowance which may be deducted will be limited to the base or pool which is earned through eligible expenditures. The depletion base will amount to \$1 for every \$3 of expenditures on exploration and development activities, on certain assets acquired for a new mine or major expansion and on facilities acquired to process, up to the prime metal stage, Canadian ores which were previously exported unprocessed. Depletion may be earned on eligible expenditures between November 7, 1969 and the end of 1976 and accumulated for deduction after 1976. The Income Tax Act was amended in 1973 to render income to custom processors from the processing of mineral ores up to the prime metal stage eligible for the automatic depletion allowance from January 1, 1973. Moreover expenditures on machinery and processing equipment acquired after May 8, 1972 will earn depletion for deduction after 1976.

Mining and petroleum companies will continue to have the right to claim costs of exploration and development incurred in the search for oil, gas or minerals in Canada as an immediate

deduction from income from all sources. The cost of mineral properties will be classified as exploration expenses and will be immediately deductible but this cost will not earn depletion. Revenue from the sale of mineral properties will be treated as income.

Prospectors and their financial backers are no longer exempt from income tax on receipts from the sale of a mining property but receipts in the form of shares will be classified as a capital gain upon sale of the shares. Only one half of a capital gain is subjected to income tax. The tax liability of the prospector upon the sale of the shares may be further reduced through purchase of a forward-averaging annuity contract. Amendments to the Act in 1973 provided that all individual taxpayers (including prospectors and grubstakers) may also invest, in a forward-averaging annuity contract, the proceeds in the form of money from the sale of resource properties after January 1, 1973. The benefit to the prospector lies in the fact that the total tax on the annual receipts from an annuity for two or more years will usually be less than if the proceeds are included in income in one year. Prospectors may deduct exploration costs from other income at the rate of 20% annually.

The general corporate tax rate which was 50% in 1972 will be reduced by one percentage point each year until it reaches 46% in 1976. The federal government abates to the provinces 10 points of the corporate tax rate. Beginning in 1977, the abatement to the provinces in the case of mining companies will be increased by 15 percentage points, reducing the federal corporate tax rate on mining companies to 21%. At that time the provinces will be in a position to occupy 25 percentage points of the corporate income tax rate on mines.

The Act was further amended in 1973 to reduce the general corporate tax rate on income from manufacturing and processing to 40% for 1973 and subsequent years. The Income Tax Regulations were also amended to permit the deduction in two years of the capital cost of manufacturing the processing machinery and equipment acquired between May 8, 1972 and December 31, 1974. The reduced corporate tax rate and the accelerated capital cost allowance apply to the processing of minerals only beyond the prime metal stage. A re-examination of the reduced tax rate may be made after March 31, 1974 upon a motion signed by not fewer than 60 members of the House of Commons.

Emergency Gold Mining Assistance Act. Under this Act, which came into force in 1948 (RSC 1970, c.E-5), financial assistance was provided to marginal gold mines to counteract the effects of increasing costs of production coupled with a fixed price for gold. By enabling gold mines to extend their productive life, the subventions helped communities dependent on gold mining to adjust gradually to diminishing support. In 1973 the Act was amended and its application extended to June 30, 1976.

The amount of assistance payable to an operator is determined by a formula and is based on the average cost of production per ounce and the number of ounces produced; it ranges from zero to \$10.27 an oz t produced. Gold mines having a cost of production of \$26.50 or less an oz t receive no assistance and those having a cost of production of \$45 or more an oz t receive the maximum rate of \$10.27 an oz t.

The open market price of gold began to rise in 1971, and further increases have occurred since then. The higher prices made it more profitable for gold mine operators to sell their gold on the open market than to sell to the Royal Canadian Mint, which is necessary to be eligible for assistance payments. The Mint buying price in US funds an oz t was \$35 until May 1972 when it was raised to \$38. The Mint buying price was further increased to \$42.22 in October 1973. No applications for assistance under the Act have been received on gold produced since December 31, 1971.

12.2.2 Provincial government aid

Newfoundland. The Newfoundland government, through the Mines Branch of the Department of Mines and Energy, provides several valuable services to those interested or involved in exploration and mining, including: a continuing program of mineral assessment designed to encourage development of the mineral resources of the province; inspection of exploration work carried out on concession areas and examination of mining operations; administration of beaches (control of removal of sand and gravel as a conservation measure) and collection of data relevant to the control of sand removal; identification of mineral rock specimens submitted by the public and examination of corresponding occurrences where warranted; technical advice dispensed to those who seek such service (i.e. in hydrological problems and on the

availability of quarriable peat moss to be removed by permit); co-operation with the Geological Survey of Canada and other federal government agencies; and preparation and publication of data useful for educational and general informational purposes, including the preparation of mineral and rock sample sets. Geological reports, geophysical maps and compilations of general data pertaining to specific areas are procurable at nominal cost and other information from unclassified files is made available to interested parties. Prospectors' or miners' permits are issued by the Mines Branch and mining claims are recorded.

Nova Scotia. Under the provisions of the Mines Act (RSNS 1967, c.185), the government of Nova Scotia may assist a mining company or operator in the sinking of shafts, slopes, deeps and winzes and the driving of adits, tunnels, crosscuts, raises and levels. This assistance may take the form of work performed under contract, the payment of bills for materials and labour, or the guarantee of bank loans. Any such work must be approved by the Department of Mines. Mining machinery and equipment to be used in searching for or testing and mining of minerals may be made available through the government. Such equipment is under the direct supervision of the Chief Mining Engineer.

New Brunswick. The Mines Division administers the disposition of Crown mineral rights including the issuing of prospecting licences, recording of mining claims, issuing of mining licences and leases and other matters pertaining thereto. Detailed and index claim maps are prepared for distribution. The Division is responsible for general and detailed geological mapping and investigations. Maps and reports are prepared for distribution, mineral and rock specimens are examined for prospectors and preliminary examinations of mineral prospects are made when requested and circumstances warrant. The Division administers the safety regulations governing operations under the Mining Act. All mines are regularly inspected, laboratory facilities are maintained and certain equipment used in mines must be approved. The Division is responsible also for the collection of mining taxes and royalties and the preparation of statistics on mineral production. A regional office, located at Bathurst and staffed by geologists and inspectors, serves as a recording office for northeastern New Brunswick, and another at Sussex, staffed by a senior geologist, conducts regional work and assists exploration companies and prospectors working in the southern area. Claim maps and topographical, geological and aeromagnetic maps are available for perusal and distribution.

Quebec. The Mines Branch of the Department of Natural Resources is responsible for implementing the Mining Act (SQ 1965, c.34) and the Mining Duties Act (SQ 1965, c.35). The Branch incorporates the following three directorates: Geology, Mining Domain and Mineral Economics and Development. The Geology Directorate consists of six services: Geological Exploration, Mineral Deposits, Geotechnics, Technical Documentation, Cartography and Technical Revision. The Directorate is responsible for the geological study of the province with the aim of promoting the development of its mineral resources. As a result of field trips undertaken each year, the Directorate produces detailed reports on various areas, and geoscientific maps. The Geotechnics Service deals with problems pertinent to the development of particular environments by investigating the geological setting of the concerned areas.

The Mining Domain Directorate includes the Mining Titles Service, the Mines Inspection Service, the Engineering Service and the Mining Conflicts Division. The Directorate controls the mining rights granted on Crown lands. Its work covers the registration of mining claims and the issuing of development permits or other special permits governing the sale or rental of lands for mining purposes. Furthermore, it sees to it that holders of mining rights carry out whatever development work is prescribed for the rights they hold. Mine inspectors verify that working conditions in mines, quarries and mills conform to the safety standards prescribed by law or regulation. The Mining Domain Directorate is also responsible for preparing and carrying out whatever engineering work is required to open up new mining areas or operations, including the building of access roads, construction of mining townsites and for any regulations pertaining to the use of the land in question. The Mining Conflicts Division is responsible for verifying the existence or validity of claims in accordance with Part VI of the Mining Act.

The Mineral Economics and Development Directorate is concerned with the optimum use of Quebec's mineral resources through development and conservation. Three services are now being organized: Projects, Economic Evaluation and Promotion. The Directorate

aims to identify and promote projects that lend themselves to quick and tangible results in the development of Quebec's mineral resources. It will carry out, or have carried out, studies on marketing, financing, transportation, development and exploitation techniques, profitability and any other essential parameter affecting the development of mineral resources.

Ontario. The objective of the Mines Division of the Ontario Ministry of Natural Resources is to provide an optimum continuous contribution to the economy of Ontario by stimulating and regulating the utilization of available supplies of minerals by resource products industries. The Mines Division is composed of four branches in Head Office: the Mineral Resources Branch, the Geological Branch, the Mines Engineering Branch and the Mineral Research Branch.

The objective of the Mineral Resources Branch is to ensure the orderly development and utilization of provincial non-renewable resources. It is essentially a strategic planning group composed of four sections: Industrial Minerals (including the administration of the Pits and Quarries Control Act), Metallic Minerals, Petroleum Resources and Commodity Analysis.

The Geological Branch's objectives are to encourage an optimum level of exploration activity and rate of mineral discovery through geological, geophysical and geochemical surveys of the province, the publication of maps and reports on mineral occurrences in Ontario and the education of prospectors and others in mineral exploration. Assessment work files are administered by this Branch. It is also responsible for the administration of the Mineral Exploration Assistance Program, a program designed to stimulate exploration in the Red Lake, Geraldton—Beardmore, Kirkland Lake and Cobalt areas. One third of the cost of exploration to a maximum of \$33,000 is provided to small- and medium-sized companies to explore in these areas.

The Mineral Research Branch is composed of the Assay Laboratory in Toronto and the Temiskaming Testing Laboratory in Cobalt. The Assay Laboratory provides assay and analytical services and conducts mineralogical investigations to aid in the discovery and development of mineral deposits. Its services are available to the mining industry and public at large. The Temiskaming Testing Laboratory situated at Cobalt operates a bulk sampling and assay laboratory to assist the producers of the area in marketing their silver-cobalt ores.

The Mines Engineering Branch administers Part IX of The Mining Act which calls for regular examination of all operating mines, quarries, sand and gravel pits and certain metallurgical works with a view to ensuring the health and safety of employees as well as the public. Regional geologists and mines engineers provide advice or support to the line organization of the Ministry. The Lands Administration and Surveys and Mapping Branches of the Lands Division handle matters dealing with the recording of mining claims, assessment work, etc. and the preparation of title to mining lands.

Manitoba. The Mines Branch of the Manitoba Department of Mines, Resources and Environmental Management offers the following services: recording the staking and acquisition of Crown mineral rights and other relative material associated with minerals, compiling assessment information and inspecting mineral rights dispositions; compiling geological data pertinent to mineral occurrences, issuing reports and maps covering geological and geochemical surveys, operating an analytical and assay laboratory to assist prospectors and geologists in the evaluation of mineral occurrences and the classification of rocks and minerals; giving engineering approval of mining works and inspecting mining operations regarding the health and safety of employees, controlling in-plant environmental and safety regulations related to mining and quarrying operations, training mine rescue crews and inspecting mine rescue facilities; inspecting oil well drilling sites, abandonment and reworking and maintaining records of each operation.

Saskatchewan. The Mineral Lands Branch of the Department of Mineral Resources is responsible for the disposition of all Crown minerals and maintains records respecting areas let out by lease, permit, drilling reservation, claim or claim block. Recording offices, located at Regina, La Ronge, Uranium City and Creighton, assist the public in determining the lands available and accept applications.

Officers of the Mines Safety Branch of the Department of Labour under the authority of The Mines Regulation Act, make regular examinations of all mines to ensure proper conditions for the health and safety of the men employed. Safety education, particularly in the form of first aid and mine rescue instruction, is also part of the work of this Branch. All Branch of-

ficers are stationed at the Regina headquarters.

The Precambrian Geology Division of the Geological Sciences Branch conducts geological surveys in the Shield areas of the province and publishes maps and reports for the information and guidance of the industry. Resident geologists are stationed at Uranium City and La Ronge and at the latter centre a laboratory provides for storage and examination of core and samples. The Division processes exploration data and assessment work to be made available for inspection by the industry.

Alberta. The Energy Resources Conservation Act, proclaimed January 1, 1972, provided for the transfer to the Energy Resources Conservation Board of responsibility for the administration of The Pipe Line Act, The Coal Mines Regulation Act and The Quarries Regulation Act. This transfer brings under one administrative authority all aspects of the energy resources of Alberta including their conservation, regulation and transmission. The Board regulates coal mines and quarries and maintains standards of safety by inspection and certification of workers. The oil and gas industries are served in a similar way but regulatory measures are also concerned with preventing the waste of oil and gas resources and with giving each owner of oil and gas rights the opportunity of obtaining a fair share of production. The Board compiles periodic reports and annual records which are of invaluable assistance in oil development in Alberta. The Workmen's Compensation Board also maintains safety standards and pays the cost of training mine rescue crews. The mining industry is also served by the Research Council of Alberta which has made geological surveys of most of the province and has carried out projects concerned with the uses and development of minerals. The Council has studied the occurrence, uses and analyses of Alberta coals and their particular chemical and physical properties, the use of coals in the generation of power, and the upgrading and cleaning of coal; and has also studied briquetting, blending, abrasion loss, shatter and crushing strength, asphalt binders and dust-proofing of coal. Studies have been made of glass sands, salt, fertilizers, cement manufacture and brick and tile manufacture.

The province from time to time has had commissions examine various aspects of the mining industry when it has considered that their findings would be of assistance in developing such industries. The province, together with the Canadian Association of Oil Well Drilling Contractors and the Canadian Petroleum Association, maintains a detailed supervisory and safety training program concerned with the drilling of oil and gas wells. Of assistance also to mining companies and oil companies are the special reductions provided for in the Alberta Income Tax Act. These follow the parallel provisions in the federal Income Tax Act.

British Columbia. The British Columbia Department of Mines and Petroleum Resources provides assistance to the mining industry through two established branches and two new divisions, Economics and Planning, and Mineral Taxation, which were to begin operation in 1974.

Inspectors of the Mineral Resources Branch are stationed at various centres throughout the province. In addition to inspecting coal mines, metal mines and quarries, they may also examine prospects, mining properties, roads and trails, and carry out special investigations under the Mineral Act. Environmental Control inspectors conduct dust, ventilation and noise surveys at all mines and quarries and recommend improvements in environmental conditions. Other inspectors administer the Roads and Trails and Prospectors Grubstake programs, and the reclamation sections of provincial mining statutes.

The Geological Division carries out a variety of geological studies and publishes data concerning mineral deposits. It makes assessments of the mineral potential of land, collects, stores and disseminates geological statistical data, and records the exploration and mining activities of the industry. An inventory of mineral deposits is under way with a view to establishing a quantitative appraisal of mineral resources. The Division offers a restricted number of free assays for prospectors, identifies rocks and minerals, and provides lectures for courses in prospecting. The Mining Titles Division administers provincial laws on the acquisition of rights to minerals and coal. It provides information, including approximate-site maps, on mineral claims and placer leases and their ownership as well as data on the ownership, location and status of coal licences and coal leases.

The Petroleum Resources Branch is responsible for administering the Petroleum and Natural Gas Act and related drilling and production regulations. These regulations stipulate efficient and safe practices to be used in the drilling, completion and abandonment of wells,

provide for the orderly development of fields, and for the conservation and prevention of waste of oil and natural gas within the reservoir and during production operations. Every well location must be approved by the Branch before drilling begins. All drilling and production operations are inspected frequently to ensure full compliance with regulations which govern such features as facilities and practices used, adequate plugging of abandoned wells, surface restoration of well sites, procedures for well-testing and measurement, disposal of produced water, fire protection and general conservation. Complaints of property damage resulting from drilling and producing operations and from geophysical work programs are investigated. Comprehensive records of all drilling and producing operations are maintained and are published or made available for study by anyone interested in oil or gas development in the province. Samples of bit cuttings as well as all core from every well drilled are retained for study. Detailed reservoir engineering and geological studies are carried out on the basis of technical information submitted from operating companies, as well as on information acquired through field work. Estimates of reserves of oil and natural gas are made annually. Crown owned oil and natural gas rights are evaluated prior to being disposed of by public tender.

12.3 Mining and petroleum legislation

12.3.1 Federal and departmental jurisdictions

Mineral rights vested in the Crown in right of Canada include those situated in the Yukon and Northwest Territories and off-shore underlying Canada's continental margins, as well as those underlying certain federally owned lands within the provinces.

The Supreme Court of Canada in its Opinion of November 1967 stated that, as between Canada and the province of British Columbia, Canada has proprietary rights in and legislative jurisdiction over "lands, including the mineral and other natural resources, of the sea bed and subsoil seaward from the ordinary low-water mark on the coast of the mainland and the several islands of British Columbia, outside the harbours, bays, estuaries and other similar inland waters, to the outer limit of the territorial sea of Canada, as defined in the Territorial Sea and Fishing Zones Act. . .". The Court also stated that the federal government has legislative jurisdiction "in respect of the mineral and other natural resources of the sea bed and subsoil beyond that part of the territorial sea of Canada. . . to a depth of 200 metres or, beyond that limit, to where the depth of the superjacent waters admits of the exploitation of the mineral and other natural resources of the said areas. . .".

The Department of Energy, Mines and Resources, through the Resource Management and Conservation Branch, is responsible for administration and enforcement of legislation and regulations relating to mineral resources off Canada's east and west coasts and in the Hudson Bay and Hudson Strait regions, as well as with respect to federally owned mineral rights that become available for development in the provinces. The Department of Indian Affairs and Northern Development, through the Northern Natural Resources and Environment Branch, is similarly responsible for mineral rights in the Yukon Territory and Northwest Territories and underlying Canada's high-Arctic off-shore regions.

Mineral rights of Indian reserves in the provinces are also vested in the Crown in the right of Canada and are administered by the Indian-Eskimo Economic Development Branch of the Department of Indian Affairs and Northern Development in consultation with the Indian band councils. The rights to a reserve may be taken up only after the Indian band has given approval for development through a referendum vote. The minerals are then administered under the Indian Oil and Gas Regulations or the Indian Mining Regulations, except in British Columbia where mining rights must be acquired under provincial statutes and the BC Indian Reserves Mineral Resources Agreement of 1943. The Indian Oil and Gas Regulations provide for disposal of rights by public tender in the form of permit or lease parcels. The Indian Mining Regulations, on the other hand, provide for disposal based on terms negotiated with the Indian band council. The Indian councils are thus assuming a greater share of responsibility in the management of their mineral resources. Officers of the Department of Indian Affairs and Northern Development are advisers to the Indian councils on mineral matters and are responsible for the administration and enforcement of relevant regulations.

12.3.2 Federal mining laws and regulations

Mining exploration is carried out in the Yukon Territory in accordance with the provisions of the Yukon Quartz Mining Act and the Yukon Placer Mining Act; in the Northwest

Territories, including Arctic coastal waters, operations are governed by the Canada Mining Regulations 1961, as amended. There are also the Territorial Dredging Regulations, Territorial Coal Regulations and Territorial Quarrying Regulations common to both territories. In the Yukon Territory, mining rights may be acquired by staking claims under the appropriate acts and regulations. A one-year lease may be obtained to prospect for the purposes of placer mining, renewable for two additional periods of one year each; a 21-year lease, renewable for a like period, may be obtained under the Yukon Quartz Mining Act.

Under the Canada Mining Regulations, a prospector's licence is required. Staked claims must be converted to lease or relinquished within 10 years. In certain areas, a system of exploration by permit over large areas is allowed. Any individual over 18 years of age or any joint-stock company incorporated or licensed to do business in Canada may hold a prospector's licence. No lease will be granted to an individual unless the Minister of the department involved is satisfied that the applicant is a Canadian citizen and will be the beneficial owner of the interest acquired under such lease; no lease will be granted to a corporation unless such corporation is incorporated in Canada and unless the Minister is satisfied that at least 50% of the issued shares of the corporation are owned by Canadian citizens or that the shares of the corporation are listed on a recognized Canadian stock exchange and that Canadians will have the opportunity of participating in the financing and ownership of the corporation. Any new mine beginning production after the Canada Mining Regulations came into force in 1961 will not be required to pay royalties for 36 months, starting from the day the mine comes into production.

An exploration assistance fund for petroleum and other minerals in the Yukon and Northwest Territories was established by the federal government in 1966. Assistance to a single applicant for one or more exploration programs is limited in aggregate to \$50,000, but not exceeding 40% of the approved cost of an exploration program. Assistance is available only to Canadian citizens or companies incorporated in Canada. Named the Northern Mineral Exploration Program, it is designed to encourage investment from additional Canadian sources previously not attracted to investment in northern exploration operations.

12.3.3 Oil and gas legislation

Oil and gas exploration and development in the Yukon and Northwest Territories and Canadian off-shore areas are governed by the Territorial Lands Act, the Public Lands Grants Act, the Oil and Gas Production and Conservation Act and regulations pursuant thereto. Both the Canada Oil and Gas Land Regulations and the Canada Oil and Gas Drilling and Production Regulations were under review during 1973.

An oil and gas exploration permit may be granted for three, four or six years, depending upon latitude and region, either upon application or, in respect of land previously held under permit, by sale through public tender. A permit is renewable for up to six one-year periods, with provisions that the appropriate Minister may grant additional renewals under special terms and conditions. The permittee is obligated to undertake exploratory work in an amount no less than five cents an acre for the first 18 to 36 months increasing to 15 to 20 cents an acre for subsequent periods of the primary term. Work obligations for each one-year renewal period increase up to 50 cents an acre. The permittee must post a guarantee deposit in the form of cash, bonds, or promissory notes prior to each work period. These deposits are returned upon receipt of satisfactory evidence that exploratory work has been performed, and are forfeited to the Crown in the event the permittee fails to fulfil the work obligations. Oil and gas leases may be selected in accordance with prescribed guidelines for up to 50% of a permit area, with that portion not converted to lease reverting to the Crown.

An oil and gas exploration permit may be issued to any individual over 21 years of age or to any joint-stock company incorporated or licensed to do business in Canada, or incorporated in any province of Canada. Extraterritorial companies applying for permits in the Northwest Territories must be registered under the Companies Ordinance of the Northwest Territories. An oil and gas lease may be granted to a permittee where the Minister of the department involved is satisfied that the applicant is a Canadian citizen over 21 years of age and will be the beneficial owner of the interest granted, or to a corporation where such corporation is incorporated in Canada, and the Minister is satisfied that at least 50% of the issued shares of the corporation are beneficially owned by Canadian citizens or that the shares of the corporation are listed on a recognized Canadian stock exchange and that Canadians will have an opportunity of participating in the financing and ownership of the corporation, or the operation is

wholly owned by a corporation that meets either of these two corporate requirements.

The Oil and Gas Production and Conservation Act provides for comprehensive control over all oil and gas operations in the territories and off-shore regions including such matters as safety, the prevention of waste and pollution, production, conservation, storage, transmission, and unitization of oil and gas fields. An Oil and Gas Committee of five members appointed by the Governor in Council is empowered to hold inquiries, to hear appeals, and to make orders in connection therewith.

Federally owned mineral rights within the provinces that are available for development (except those in Indian lands) are administered by the Department of Energy, Mines and Resources under regulations promulgated pursuant to the Public Lands Grants Act.

12.3.4 Provincial mining laws and regulations

In general, all Crown mineral lands lying within the boundaries of the several provinces (with the exception of those within Indian reserves, national parks and other lands which are under the jurisdiction of the federal government) are administered by the respective provincial governments. The exception is Quebec where all mineral rights except those granted with lands conceded to individuals prior to July 29, 1880 are administered by the province; also, mining rights on federal lands in Quebec are administered by the province.

The granting of land in any province except Ontario no longer automatically carries with it mining rights upon or under such land. In Ontario, mineral rights are expressly reserved if they are not to be included. In Nova Scotia, no mineral rights belong to the owner of the land except those pertaining to gypsum, agricultural limestone and building materials, and the Lieutenant Governor in Council may declare deposits of either limestone or building materials to be minerals. Such declaration is to be based on economic value or to serve the public interest. In such case, the initial privilege of acquiring the declared minerals lies with the owner of the surface rights who must then conform with the requirements of the Mines Act. In Newfoundland, mineral and quarry rights are expressly reserved. Some early grants in British Columbia, Alberta, Saskatchewan, Manitoba, New Brunswick, Quebec and Newfoundland also included certain mineral rights. Otherwise, mining rights must be obtained separately by lease or grant from the provincial authority administering the mining laws and regulations. Mining activities may be classified as placer, general minerals (or veined minerals and bedded minerals), fuels (coal, petroleum and gas) and quarrying. Provincial mining regulations under these divisions are summarized in the following paragraphs.

In most provinces in which placer deposits occur there are regulations defining the size of placer holdings, the terms under which they may be acquired and held, and the royalties to be paid.

General minerals are sometimes described as quartz, lode, or minerals in place. With the exception of British Columbia, the most elaborate laws and regulations apply in this division. In all provinces except Alberta and Saskatchewan, a prospector's or miner's licence, valid for one year, must be obtained to search for mineral deposits, the licence being general in some areas but limited in others; a claim of promising ground of a specified size may then be staked. In Manitoba and British Columbia a licence is required only for staking and any number of dispositions may be staked under one licence. A claim must be recorded within a time limit and payment of recording fees made, except in Quebec where no fees are required. Work to a specified value per annum must be performed upon the claim for a period of up to 10 years except in Quebec where a development licence may be renewed on a yearly basis; also in Manitoba and Saskatchewan there is no work commitment in the first year of the claim. The maximum life of a prospecting licence in Nova Scotia is six years continuous from the original date of issue, after which the operator is expected to go to lease with a productive deposit. In Quebec and Nova Scotia a specified cost of work must be performed and any excess amount expended may be applied to subsequent renewals of the development licence. The taxation applied most frequently is a percentage of net profits of producing mines or royalties. In Saskatchewan, subsurface mineral regulations covering non-metallics stipulate the size and type of dispositions that may be made in order to maintain the disposition in good standing, provide for fees, rentals and royalties, and set out generally the rights and obligations of the disposition holder.

In provinces where coal occurs, the size of holdings is laid down together with the conditions of work and rental under which they may be held. In Quebec, the search for petroleum

and natural gas may be carried out under an exploration licence followed by an operating lease; the exploration licence covers a period of five years and an acreage of not over 60,000 acres, whereas the operating lease extends over a 20-year period and an acreage not over half the acreage of the permit. In Nova Scotia, mining rights to certain minerals, including petroleum, occurring under differing conditions may be held by different licensees. Provision is sometimes made for royalties. Acts or regulations govern methods of production. In the search for petroleum and natural gas, an exploration permit or reservation is usually required; however, in Saskatchewan, Alberta and British Columbia leases usually follow the exploration reservation whether or not any discovery of oil or gas is made. In Alberta, exploration costs are applicable in part on the first year's lease rental, in Manitoba they may be applied to the lease rental for a period of up to three years and, in British Columbia and Saskatchewan, credit is given for up to 24 months' rental, having regard to the amount of excess credit established. In other provinces, the discovery of oil or gas is usually prerequisite to obtaining a lease or grant of a limited area, subject to carrying out drilling obligations and paying a rental, a fee, or a royalty on production.

Quarrying regulations define the size of holdings and the terms of lease or grant. In Nova Scotia, sand deposits of a quality suitable for uses other than building purposes and limestone deposits of metallurgical grade belong to the Crown; gypsum deposits belong to the owner of the property. Under the New Brunswick Quarriable Substances Act, 1968, quarriable substances (ordinary stone, building and construction stone, sand, gravel, peat and peat moss) are vested in the owner of the land in or on which they lie; the Minister with the approval of the Lieutenant Governor in Council may designate a shore area lying outside Crown land to be subject to the Act; and no person shall take or remove or cause to be taken or removed more than one half cubic yard of a quarriable substance from Crown land or a designated shore area without obtaining a permit or lease. On Quebec public lands and on those granted to individuals after January 1, 1966, the stone, sand and gravel, like other building materials, belong to the Crown; quarries located on land granted to individuals prior to 1966 remain in the possession of the owners of the surface; the right to exploit all building materials except sand and gravel may be acquired by ordinary staking-out and the right to work sand and gravel beds is set by regulation. In Saskatchewan, sand and gravel on the surface and all sand and gravel obtainable by stripping off the overburden or other surface operation belong to the owner of the surface of the land. In Alberta, sand, gravel, clay and marl recovered by excavating from the surface belong to the owner of the surface of the land. Copies of mining legislation including regulations and other details may be obtained from the provincial authorities concerned.

Sources

- 12.1 - 12.2.1 Minerals and Metals Division, Mineral Development Sector, Department of Energy, Mines and Resources.
- 12.2.2 Supplied by the respective provincial government departments.
- 12.3 - 12.3.3 Minerals and Metals Division, Mineral Development Sector, Department of Energy, Mines and Resources.
- 12.3.4 Supplied by the respective provincial government departments.

Tables

..	not available	bbl	barrels
...	not appropriate or not applicable	b/d	barrels a day
—	nil or zero	Mcf	thousand cubic feet
--	too small to be expressed	MMcf	million cubic feet
e	estimate	MMMcf	billion cubic feet
p	preliminary	MMMMcf	trillion cubic feet
r	revised	million = 10 ⁶ , billion = 10 ⁹ , trillion = 10 ¹²	
certain tables may not add due to rounding			

12.1 Value of mineral production, 1886-1972

Year	Total value \$'000	Value per capita \$	Year	Total value \$'000	Value per capita \$	Year	Total value \$'000	Value per capita \$
1886	10,221	2.23	1925	226,583	24.38	1965	3,714,861	189.11
1890	16,763	3.51	1930	279,874	27.42	1966	3,980,546	198.88
1895	20,506	4.08	1935	312,344	28.84	1967	4,380,805	214.96
1900	64,421	12.15	1940	529,825	46.55	1968	4,722,249	227.64
1905	69,079	11.51	1945	498,755	41.31	1969	4,734,284	225.43
1910	106,824	15.29	1950 ¹	1,045,450	76.24	1970	5,722,059	268.68
1915	137,109	17.18	1955	1,795,311	114.37	1971	5,968,002	276.70
1920	227,860	26.63	1960	2,492,510	139.48	1972	6,403,182	293.32

¹Value of Newfoundland production included from 1950.

12.2 Value of mineral production by class, 1963-72 (thousand dollars)

Year	Metallics	Non-metallics	Fuels	Structural materials	Total
1963	1,509,537	253,452	885,175	379,011	3,027,176
1964	1,701,649	287,497	973,003	403,058	3,365,207
1965	1,907,576	327,239	1,045,885	434,162	3,714,861
1966	1,984,673	363,388	1,151,836	480,650	3,980,546
1967	2,285,279	406,269	1,234,596	454,660	4,380,805
1968	2,492,600	446,922	1,343,163	439,563	4,722,249
1969	2,377,523	450,189	1,465,400	441,172	4,734,284
1970	3,073,344	480,538	1,717,731	450,446	5,722,059
1971	2,940,287	500,827	2,014,410	512,478	5,968,002
1972	2,952,413	513,488	2,367,554	569,728	6,403,182

12.3 Quantity indexes of production of the principal mining industries, 1963-72 (1961=100)

Mining industry	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972
Metal mines	104.1	120.2	122.8	121.1	129.3	135.9	122.1	155.3	156.3	145.0
Placer gold and gold quartz	91.4	90.1	87.4	82.2	73.6	66.8	59.5	64.3	60.3	50.2
Iron	170.4	208.6	224.8	241.5	260.7	314.8	268.3	368.4	360.4	276.3
Miscellaneous	95.7	111.4	112.7	108.6	117.9	119.2	109.6	137.0	140.3	140.3
Non-metal mines (except coal)	121.4	139.2	151.5	164.2	173.6	189.7	203.2	207.7	212.2	220.7
Asbestos	109.0	121.9	118.2	127.7	125.6	132.7	133.9	142.5	141.7	141.4
Mineral fuels	123.0	133.0	142.0	152.4	166.1	181.5	198.8	233.0	256.1	295.7
Coal	104.5	109.8	111.9	103.7	103.1	102.6	99.1	155.3	195.6	207.4
Crude oil and natural gas	126.3	137.2	147.4	161.2	177.5	195.7	216.8	247.0	267.0	311.6
Total, mines (incl. milling), quarries and oil wells	112.1	126.0	131.9	134.2	142.1	152.4	150.8	178.5	186.8	191.8

12.4 Quantity and value of mineral production, 1971 and 1972

Mineral	1971		1972	
	Quantity	Value \$	Quantity	Value \$
METALLICS		2,940,287,001		2,952,412,514
Antimony	lb.	323,525	...	1,243,542
Bismuth	"	271,196	...	849,675
Cadmium	"	4,063,805	275,029	10,798,008
Calcium	"	355,247	4,267,987	337,609
Cobalt	"	4,323,318	469,378	8,320,722
Columbium (Cb ₂ O ₅)	"	2,332,663	3,351,108	3,868,448
Copper	"	1,442,860,080	2,296,962	806,427,128
Gold	oz t	2,260,730	760,016,078	119,742,087
Indium	"	...	79,903,241	462,000
Iron ore	ton	47,352,181	555,135,728	489,023,459
Iron, remelt	"	...	30,824,497	41,543,927
Lead	lb.	811,020,178	109,487,724	113,989,670
Magnesium	"	14,467,305	5,163,921	4,537,125
Mercury	"	...	1,112,412	44,067,885
Molybdenum	"	22,662,732	38,367,344	717,485,105
Nickel	"	588,683,212	800,064,068	34,656,545
Platinum group	oz t	475,169	39,821,616	5,186,155
Selenium	lb.	718,440	6,530,619	...

12.4 Quantity and value of mineral production, 1971 and 1972 (concluded)

Mineral		1971		1972	
		Quantity	Value \$	Quantity	Value \$
METALLICS (concluded)					
Silver	oz t	46,023,570	71,796,769	44,792,209	74,802,988
Tantalum (Ta ₂ O ₅)	lb.	449,610	2,901,293	41,120	246,658
Tellurium	"	24,488	148,397	45,649	271,155
Tin	"	318,999	421,079	351,043	473,908
Tungsten (WO ₃)	"	4,624,208	..	4,447,316	..
Uranium (U ₃ O ₈)	"	8,214,391	..	9,762,700	..
Yttrium (Y ₂ O ₃)	"	..	..	..	..
Zinc	"	2,499,469,025	418,161,166	2,488,284,385	474,540,715
NON-METALLICS					
Arsenious oxide	lb.	100,000	500,826,829	..	513,488,411
Asbestos	ton	1,634,579	203,999,244	1,687,051	206,088,535
Barite	"	120,765	1,060,543	77,261	804,096
Diatomite	"	..	..	..	..
Feldspar	"	10,774	216,039	11,684	232,383
Fluorspar	"	..	2,819,091	..	5,432,151
Gemstones	lb.	167,760	196,332	703,725	305,218
Gypsum	ton	6,702,100	15,082,700	8,099,480	19,335,891
Helium	Mcf	..	..	..	..
Magnesian dolomite and brucite	ton	..	2,673,053	..	2,928,942
Nepheline syenite	"	517,190	6,206,014	559,483	5,902,063
Nitrogen	Mcf	..	..	..	..
Peat moss	ton	337,324	11,803,436	375,725	13,612,326
Potash (K ₂ O)	"	3,999,511	134,955,000	3,852,120	135,512,850
Pyrite, pyrrhotite	"	317,948	1,161,800	125,897	456,157
Quartz	"	2,553,884	7,411,354	2,663,836	9,536,318
Salt	"	5,541,901	40,110,708	5,416,925	40,143,665
Soapstone, talc, pyrophyllite	"	65,562	1,060,136	80,946	1,462,507
Sodium sulphate	"	481,919	7,064,250	507,275	6,200,598
Sulphur, in smelter gas	"	618,487	4,632,467	678,844	5,118,483
Sulphur, elemental	"	3,149,280	21,299,520	3,635,631	19,587,807
Titanium dioxide, etc.	"	..	39,064,142	..	40,828,421
FUELS					
Coal	ton	18,432,199	2,014,409,996	..	2,367,553,821
Natural gas	Mcf	2,499,023,600	342,548,891	20,709,316	150,600,310
Natural gas by-products	bbf	85,678,080	193,191,039	2,913,537,215	397,185,830
Oil, crude	"	492,739,049	1,356,942,889	108,586,704	250,940,075
STRUCTURAL MATERIALS					
Clay products	..	..	512,478,366	..	569,727,601
Cement	..	..	48,583,262	..	52,347,688
Lime	ton	9,066,795	191,244,394	9,975,762	209,221,337
Sand and gravel	"	1,598,254	23,485,637	1,730,311	26,732,421
Stone	"	213,291,000	152,628,000	225,194,000	178,100,000
	"	73,514,842	96,537,073	80,202,524	103,326,155
Total	..	..	5,968,002,192	..	6,403,182,347

12.5 Percentage of the total value contributed by principal minerals, 1963-72

Mineral	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972
METALLICS¹										
Copper	49.3	50.2	50.9	50.0	51.9	52.7	50.2	53.7	49.3	46.1
Gold	9.3	9.6	10.2	11.4	13.2	12.9	12.4	13.6	12.7	12.6
Iron ore	5.0	4.3	3.6	3.2	2.6	2.2	2.0	1.5	1.3	1.9
Lead	10.3	11.9	11.0	10.9	10.7	11.3	9.6	10.3	9.3	7.6
Molybdenum	1.5	1.6	2.4	2.3	2.0	1.9	2.0	2.2	1.8	1.8
Nickel	0.4	0.6	0.5	0.9	0.9	0.8	1.1	1.0	0.6	0.7
Platinum group	11.8	11.2	11.5	9.5	10.5	11.2	10.2	14.5	13.4	8.1
Silver	0.7	0.7	1.0	0.8	0.8	1.0	0.7	0.8	0.7	0.5
Uranium	1.4	1.2	1.2	1.2	1.4	2.2	1.8	1.4	1.2	1.2
Zinc	4.5	2.5	1.7	1.4	1.2	1.1	1.1	..	..	..
	4.0	5.7	6.6	7.3	7.3	6.9	7.8	7.0	7.0	7.4
NON-METALLICS¹										
Asbestos	8.3	8.4	8.7	9.1	9.2	9.5	9.5	8.4	8.4	8.0
Gypsum	4.5	4.3	3.9	4.1	3.8	3.9	4.1	3.6	3.4	3.2
Nepheline syenite	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Potash	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Quartz	0.7	0.9	1.5	1.6	1.5	1.4	1.5	1.9	2.3	2.1
Salt	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Sodium sulphate	0.7	0.6	0.6	0.6	0.6	0.7	0.6	0.6	0.7	0.6
Sulphur, in smelter gas	0.1	0.2	0.1	0.2	0.1	0.1	0.2	0.1	0.1	0.1
Sulphur, elemental	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.1	0.1	0.1
Titanium dioxide, etc.	0.4	0.6	0.7	1.0	1.6	1.7	1.3	0.5	0.4	0.3
	0.5	0.6	0.6	0.5	0.5	0.6	0.6	0.6	0.7	0.6
FUELS¹										
Coal	29.8	29.5	28.8	29.0	28.7	28.4	30.9	30.0	33.7	37.0
Natural gas	2.4	2.1	2.0	2.1	1.9	1.1	1.1	1.5	2.0	2.9
Oil, crude	4.9	5.1	5.0	4.5	4.5	4.8	5.5	5.5	5.7	6.2
	20.2	19.9	19.3	19.9	19.7	19.8	21.4	20.2	22.7	24.5

12.5 Percentage of the total value contributed by principal minerals, 1963-72 (concluded)

Mineral	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972
STRUCTURAL MATERIALS	<i>12.4</i>	<i>11.9</i>	<i>11.6</i>	<i>11.9</i>	<i>10.2</i>	<i>9.4</i>	<i>9.4</i>	<i>7.9</i>	<i>8.6</i>	<i>8.9</i>
Clay products	1.3	1.2	1.2	1.1	1.0	1.0	1.1	0.9	0.8	0.8
Cement	3.9	3.9	3.8	3.9	3.3	3.2	3.4	2.7	3.2	3.3
Lime	0.6	0.6	0.5	0.5	0.4	0.4	0.4	0.4	0.4	0.4
Sand and gravel	4.0	3.7	3.6	3.8	3.2	2.8	2.6	2.3	2.6	2.8
Stone	2.6	2.5	2.5	2.6	2.3	2.0	1.9	1.5	1.6	1.6
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

¹Includes minor items not specified.

12.6 Value of mineral production, by province, 1963-72 (thousand dollars)

Year	Province or territory						
	Newfound- land (incl. Labrador)	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba
1963	137,797	798	66,539	28,343	540,615	874,209	169,627
1964	182,153	831	66,228	48,678	684,583	904,077	173,873
1965	207,558	599	71,007	82,164	715,901	993,731	182,144
1966	244,020	1,063	85,596	90,208	771,180	957,852	179,342
1967	266,365	1,775	52,544	90,440	741,436	1,194,549	184,679
1968	309,712	977	56,940	88,452	725,078	1,355,629	209,626
1969	256,936	452	58,562	94,593	717,156	1,222,172	246,275
1970	353,261	640	58,159	104,791	803,286	1,593,039	332,214
1971	343,431	978	60,138	107,134	769,857	1,554,154	329,913
1972	290,610	1,097	57,520	119,930	782,641	1,534,754	323,291
	Saskat- chewan	Alberta	British Columbia	Yukon Territory	Northwest Territories	Canada	
1963	274,177	644,454	260,359	14,367	15,891	3,027,176	
1964	293,287	709,487	268,724	15,204	18,081	3,365,207	
1965	328,852	761,893	280,156	13,401	77,456	3,714,861	
1966	348,505	848,667	330,898	11,976	111,239	3,980,546	
1967	361,824	974,366	379,555	14,991	118,283	4,380,805	
1968	357,082	1,092,444	389,307	21,366	115,636	4,722,249	
1969	344,625	1,205,308	433,633	35,403	119,171	4,734,284	
1970	379,190	1,395,994	490,158	77,512	133,814	5,722,059	
1971	408,853	1,641,223	543,656	93,111	115,554	5,968,002	
1972	409,620	1,978,606	677,995	106,781	120,337	6,403,182	

12.7 Value of metallics, non-metallics, fuels and structural materials produced, by province, 1971 and 1972 (thousand dollars)

Year and province or territory	Metallics	Non-metallics	Fuels	Structural materials	Total
1971					
Newfoundland (incl. Labrador)	316,424	17,592	—	9,416	343,431
Prince Edward Island	—	—	—	978	978
Nova Scotia	215	20,964	—	15,937	60,138
New Brunswick	91,049	2,903	23,021	9,143	107,134
Quebec	436,882	207,838	4,039	125,112	769,857
Ontario	1,290,618	43,887	9,060	210,589	1,554,154
Manitoba	284,315	2,421	15,413	27,765	329,913
Saskatchewan	16,095	145,465	236,002	11,292	408,853
Alberta	3	23,514	1,575,198	42,508	1,641,223
British Columbia	309,810	23,871	150,237	59,738	543,656
Yukon Territory	80,646	12,374	90	—	93,111
Northwest Territories	114,229	—	1,325	—	115,554
Canada, 1971	2,940,287	500,827	2,014,410	512,478	5,968,002
1972					
Newfoundland (incl. Labrador)	261,013	19,320	—	10,278	290,610
Prince Edward Island	—	—	—	1,097	1,097
Nova Scotia	2	22,575	16,117	18,827	57,520
New Brunswick	98,773	3,821	3,553	13,784	119,930
Quebec	433,364	212,083	26	137,168	782,641
Ontario	1,251,474	44,204	7,266	231,809	1,534,754
Manitoba	272,974	3,107	14,588	32,623	323,291
Saskatchewan	21,855	145,636	231,938	10,191	409,620
Alberta	—	22,363	1,908,400	47,843	1,978,606
British Columbia	401,557	27,374	182,955	66,108	677,995
Yukon Territory	93,496	13,006	279	—	106,781
Northwest Territories	117,905	—	2,432	—	120,337
Canada, 1972	2,952,413	513,488	2,367,554	569,728	6,403,182

12.8 Detailed mineral production, by province, 1972 with totals for 1971

Mineral		Province or territory				
		Newfound- land (incl. Labrador)	Nova Scotia	New Brunswick	Quebec	Ontario
METALLICS	\$	261,012,538	2,431	98,772,724	433,363,697	1,251,474,449
Antimony	lb.	—	—	—	—	—
	\$	—	—	824,500	—	—
Bismuth	lb.	—	—	38,592	120,313	22,304
	\$	—	—	50,056	382,734	80,071
Cadmium	lb.	158,800	—	31,490	334,343	2,575,274
	\$	401,764	—	79,670	845,888	6,515,443
Calcium	lb.	—	—	—	—	469,378
	\$	—	—	—	—	337,609
Cobalt	lb.	—	—	—	19,319	2,593,814
	\$	—	—	—	46,172	6,387,560
Columbium (Cb ₂ O ₃)	lb.	—	—	—	3,873,787	—
	\$	—	—	—	3,868,448	—
Copper	lb.	19,026,443	—	20,621,087	352,863,529	579,445,166
	\$	9,689,977	—	10,502,113	179,709,867	293,493,836
Gold	oz t	14,069	42	3,205	539,669	1,019,303
	\$	810,487	2,420	184,633	31,089,252	58,720,007
Indium	oz t	—	—	—	—	—
	\$	—	—	—	—	—
Iron ore	ton	18,071,738	—	—	11,615,080	11,755,336
	\$	235,249,411	—	—	101,655,102	139,514,537
Iron, remelt	ton	—	—	—	—	—
	\$	—	—	—	41,543,927	—
Lead	lb.	24,404,816	—	90,980,354	3,351,250	21,210,868
	\$	3,765,175	—	14,036,449	517,031	3,272,413
Magnesium	lb.	—	—	—	—	11,847,671
	\$	—	—	—	—	4,537,125
Mercury	lb.	—	—	—	—	—
	\$	—	—	—	—	—
Molybdenum	lb.	—	—	—	451,404	—
	\$	—	—	—	807,536	—
Nickel	lb.	—	—	—	610,905	378,855,007
	\$	—	—	—	867,485	519,935,356
Platinum group	oz t	—	—	—	—	402,423
	\$	—	—	—	—	34,330,972
Selenium	lb.	—	—	—	406,898	108,783
	\$	—	—	—	3,625,461	969,257
Silver	oz t	572,928	7	3,906,470	3,558,027	19,587,694
	\$	956,790	11	6,523,805	5,941,905	32,711,449
Tantalum (Ta ₂ O ₅)	lb.	—	—	—	—	—
	\$	—	—	—	—	—
Tellurium	lb.	—	—	—	33,374	8,327
	\$	—	—	—	198,242	49,462
Tin	lb.	—	—	—	—	—
	\$	—	—	—	—	—
Tungsten (WO ₃)	lb.	—	—	—	—	—
	\$	—	—	—	—	—
Uranium (U ₃ O ₈)	lb.	—	—	—	—	8,428,053
	\$	—	—	—	—	—
Yttrium (Y ₂ O ₃)	lb.	—	—	—	—	—
	\$	—	—	—	—	—
Zinc	lb.	53,164,142	—	349,071,880	326,488,634	789,782,141
	\$	10,138,934	—	66,571,498	62,264,647	150,619,352
NON-METALLICS	\$	19,319,798	22,574,529	3,820,526	212,082,646	44,204,291
Arsenious oxide	lb.	—	—	—	—	—
	\$	—	—	—	—	—
Asbestos	ton	63,846	—	—	1,377,950	37,560
	\$	10,841,820	—	—	156,964,604	4,405,394
Barite	ton	—	408,807	—	—	—
	\$	—	—	—	—	—
Diatomite	ton	—	—	—	—	—
	\$	—	—	—	—	—
Feldspar	ton	—	—	—	11,684	—
	\$	—	—	—	232,383	—
Fluorspar	ton	—	—	—	—	—
	\$	—	—	—	—	—
Gemstones	lb.	5,432,151	—	—	—	—
	\$	—	—	—	—	—
Gypsum	ton	735,252	5,999,301	74,582	—	70,000
	\$	2,145,985	13,228,556	220,248	—	726,491
Helium	Mcf	—	—	—	—	2,158,231
	\$	—	—	—	—	—
Magnesian dolomite and brucite	ton	—	—	—	—	—
	\$	—	—	—	2,928,942	—
Nepheline syenite	ton	—	—	—	—	559,483
	\$	—	—	—	—	5,902,063
Nitrogen	Mcf	—	—	—	—	—
	\$	—	—	—	—	—
Peat moss	ton	—	8,511	91,431	151,902	13,560
	\$	—	351,243	3,367,978	5,208,898	570,713
Potash (K ₂ O)	ton	—	—	—	—	—
	\$	—	—	—	—	—
Pyrite, pyrrhotite	ton	—	—	—	125,897	—
	\$	—	—	—	456,157	—
Quartz	ton	—	—	—	710,217	1,177,753
	\$	339,832	27,700	—	4,478,970	2,750,258
Salt	ton	—	812,596	—	—	4,037,789
	\$	—	8,558,223	—	—	24,481,406

12.8 Detailed mineral production, by province, 1972 with totals for 1971 (continued)

Mineral		Province or territory				
		Newfound-land (incl. Labrador)	Nova Scotia	New Brunswick	Quebec	Ontario
NON METALLICS (concluded)						
Soapstone, talc, pyrophyllite	ton	—	—	—	—	—
	\$	560,010	—	—	484,769	417,728
Sodium sulphate	ton	—	—	—	—	—
	\$	—	—	—	—	—
Sulphur, in smelter gas	ton	—	—	30,809	66,247	340,708
	\$	—	—	232,300	499,502	2,568,938
Sulphur, elemental	ton	—	—	—	—	50,376
	\$	—	—	—	—	879,560
Titanium dioxide, etc.	ton	—	—	—	—	—
	\$	—	—	—	40,828,421	—
FUELS						
Coal	\$	—	16,116,667	3,552,863	26,362	7,266,268
	ton	—	1,425,439	429,544	—	—
	\$	—	16,116,667	3,483,530	—	—
Natural gas	Mcf	—	—	97,114	186,849	12,375,129
	\$	—	—	57,133	26,362	4,767,580
Natural gas by-products	bbl	—	—	—	—	—
	\$	—	—	—	—	—
Oil, crude	bbl	—	—	8,714	—	877,965
	\$	—	—	12,200	—	2,498,688
STRUCTURAL MATERIALS						
Clay products	\$	10,278,131	18,826,831	13,784,226	137,168,138	231,809,052
	\$	208,553	1,681,784	667,324	7,402,549	31,569,829
Cement	ton	—	—	—	3,180,238	3,761,195
	\$	2,708,668	4,825,000	4,324,467	58,545,655	76,213,423
Lime	ton	—	—	—	291,542	1,192,197
	\$	—	—	650,508	3,836,045	18,475,204
Sand and gravel	ton	5,433,000	9,896,000	7,561,000	44,993,000	76,380,000
	\$	6,829,000	9,732,000	4,585,000	20,916,000	64,320,000
Stone	ton	204,245	1,047,413	1,901,171	41,383,701	31,091,493
	\$	531,910	2,588,047	3,556,927	46,467,889	41,230,596
Total 1972	\$	290,610,467	57,520,458	119,930,339	782,640,843	1,534,754,060
Total 1971	\$	343,431,278	60,137,535	107,133,849	769,857,462	1,554,153,901
		Manitoba	Saskatchewan	Alberta	British Columbia	
METALLICS						
Antimony	\$	272,973,716	21,854,726	—	173	401,557,119
	lb.	—	—	—	—	679,601
	\$	—	—	—	—	419,042
Bismuth	lb.	—	—	—	—	93,820
	\$	—	—	—	—	336,814
Cadmium	lb.	277,181	81,338	—	—	695,650
	\$	701,268	205,785	—	—	1,759,995
Calcium	lb.	—	—	—	—	—
	\$	—	—	—	—	—
Cobalt	lb.	582,236	—	—	—	155,739
	\$	1,514,774	—	—	—	372,216
Columbium (Cb ₂ O ₃)	lb.	—	—	—	—	—
	\$	—	—	—	—	—
Copper	lb.	119,663,641	25,092,412	—	—	467,012,694
	\$	60,943,496	12,779,314	—	—	237,840,823
Gold	oz t	38,032	30,527	3	—	122,159
	\$	2,190,947	1,758,599	173	—	7,037,336
Indium	oz t	—	—	—	—	462,000
	\$	—	—	—	—	—
Iron ore	ton	—	—	—	—	1,256,308
	\$	—	—	—	—	12,604,409
Iron, remelt	ton	—	—	—	—	—
	\$	—	—	—	—	—
Lead	lb.	391,130	—	—	—	195,149,181
	\$	60,344	—	—	—	30,107,615
Magnesium	lb.	—	—	—	—	—
	\$	—	—	—	—	—
Mercury	lb.	—	—	—	—	1,112,412
	\$	—	—	—	—	—
Molybdenum	lb.	—	—	—	—	28,041,603
	\$	—	—	—	—	43,260,349
Nickel	lb.	132,453,533	—	—	—	3,240,483
	\$	188,084,016	—	—	—	4,601,486
Platinum group	oz t	—	—	—	—	—
	\$	—	—	—	—	—
Selenium	lb.	52,555	13,824	—	—	—
	\$	468,265	123,172	—	—	—
Silver	oz t	808,376	384,443	—	—	6,926,036
	\$	1,349,988	642,020	—	—	11,566,480
Tantalum (Ta ₂ O ₅)	lb.	41,120	—	—	—	—
	\$	246,658	—	—	—	—
Tellurium	lb.	3,126	822	—	—	—
	\$	18,568	4,883	—	—	—

12.8 Detailed mineral production, by province, 1972 with totals for 1971 (continued)

Mineral		Province or territory			
		Manitoba	Saskatchewan	Alberta	British Columbia
METALLICS (concluded)					
Tin	lb.	—	—	—	351,043
	\$	—	—	—	473,908
Tungsten (WO ₃)	lb.	—	—	—	1,273,196
	\$	—	—	—	—
Uranium (U ₃ O ₈)	lb.	—	1,334,647	—	—
	\$	—	—	—	—
Yttrium (Y ₂ O ₃)	lb.	—	—	—	—
	\$	—	—	—	—
Zinc	lb.	91,213,842	33,249,190	—	268,347,996
	\$	17,395,392	6,340,953	—	51,176,646
NON-METALLICS					
Arsenious oxide	\$	3,107,111	145,636,110	22,363,175	27,373,749
	lb.	—	—	—	—
Asbestos	\$	—	—	—	—
	ton	—	—	—	105,807
Barite	\$	—	—	—	20,870,241
	ton	—	—	—	—
Diatomite	\$	—	—	—	395,289
	ton	—	—	—	—
Feldspar	\$	—	—	—	—
	ton	—	—	—	—
Fluorspar	\$	—	—	—	—
	ton	—	—	—	—
Gemstones	\$	—	—	—	—
	lb.	—	—	—	—
Gypsum	\$	—	—	—	235,218
	ton	175,625	—	—	388,229
Helium	\$	495,674	—	—	1,087,197
	Mcf	—	—	—	—
Magnesitic dolomite and brucite	\$	—	—	—	—
	ton	—	—	—	—
Nepheline syenite	\$	—	—	—	—
	ton	—	—	—	—
Nitrogen	\$	—	—	—	—
	Mcf	—	—	—	—
Peat moss	\$	—	—	—	—
	ton	26,701	7,394	11,180	65,046
Potash (K ₂ O)	\$	1,001,191	277,428	367,043	2,467,832
	ton	—	3,852,120	—	—
Pyrite, pyrrhotite	\$	—	135,512,850	—	—
	ton	—	—	—	—
Quartz	\$	—	—	—	—
	ton	460,305	159,415	—	43,453
Salt	\$	1,327,740	135,000	287,659	189,159
	ton	30,995	251,587	283,958	—
Soapstone, talc, pyrophyllite	\$	135,000	4,258,507	2,710,529	—
	ton	—	—	—	—
Sodium sulphate	\$	—	—	—	—
	ton	—	—	—	—
Sulphur, in smelter gas	\$	—	5,258,558	942,040	—
	ton	—	—	—	241,080
Sulphur, elemental	\$	—	—	—	1,817,743
	ton	3,935	20,504	3,503,639	57,177
Titanium dioxide, etc.	\$	147,506	193,767	18,055,904	311,070
	ton	—	—	—	—
	\$	—	—	—	—
FUELS					
Coal	\$	14,588,006	231,938,092	1,908,399,750	182,955,393
	ton	—	3,282,798	9,024,437	6,547,098
	\$	—	6,551,991	52,196,875	72,251,247
Natural gas	Mcf	—	68,911,578	2,385,440,169	432,132,202
	\$	—	8,932,087	338,708,715	43,042,713
Natural gas by-products	bbl	—	1,315,193	105,432,458	1,839,053
	\$	—	2,397,500	244,591,526	3,951,049
Oil, crude	bbl	5,256,939	86,787,209	444,220,065	23,935,975
	\$	14,588,006	214,056,514	1,272,902,634	63,710,384
STRUCTURAL MATERIALS					
Clay products	\$	32,622,630	10,190,778	47,842,505	66,108,310
	\$	667,382	1,488,300	4,290,276	4,371,691
Cement	\$	566,019	137,016	902,500	919,189
	ton	14,750,762	4,253,478	22,605,772	20,994,112
Lime	\$	—	—	128,397	—
	ton	978,791	—	2,331,028	460,845
Sand and gravel	\$	14,763,000	8,512,000	20,556,000	35,522,000
	\$	14,970,000	4,449,000	17,807,000	33,395,000
Stone	\$	609,609	—	195,773	3,769,119
	\$	1,255,695	—	808,429	6,886,662
Total 1972	\$	323,291,463	409,619,706	1,978,605,603	677,994,571
Total 1971	\$	329,913,482	408,853,455	1,641,222,509	543,655,735

12.3 Detailed mineral production, by province, 1972 with totals for 1971 (continued)

Mineral	Province or territory			
	Yukon Territory	Northwest Territories	Canada	
			1972	1971
METALLICS	\$			
Antimony	93,495,591	117,905,350	2,952,412,514	2,940,287,001
	lb.	—	—	323,525
	\$	—	1,243,542	243,614
Bismuth	—	—	275,029	271,196
	lb.	—	849,675	1,398,035
	\$	—	4,267,987	4,063,805
Cadmium	32,711	81,200	10,798,008	7,883,782
	\$	205,436	469,378	355,247
Calcium	—	—	337,609	291,504
	lb.	—	3,351,108	4,323,318
	\$	—	8,320,722	9,429,564
Cobalt	—	—	3,873,787	2,332,663
Columbium (Cb ₂ O ₅)	—	—	3,868,448	2,296,962
	lb.	—	1,586,606,832	1,442,860,080
Copper	1,748,093	1,133,767	806,427,128	760,016,078
	\$	577,416	2,078,567	2,260,730
Gold	4,079	307,479	119,742,087	79,903,241
	oz t	17,713,250	462,000	..
Indium	—	—	42,698,462	47,352,181
	oz t	—	489,023,459	555,135,728
Iron ore	—	—	41,543,927	30,824,497
	ton	—	738,849,301	811,020,178
Iron, remelt	—	—	113,989,670	109,487,724
	ton	—	11,847,671	14,467,305
Lead	222,921,742	180,439,960	4,537,125	5,163,921
	\$	27,838,277	1,112,412	..
Magnesium	34,392,366	—	28,493,007	22,662,732
	lb.	—	44,067,885	38,367,344
	\$	—	517,974,549	588,683,212
Mercury	—	—	717,485,105	800,064,068
	lb.	—	406,048	475,169
Molybdenum	—	—	34,656,545	39,821,616
	lb.	—	582,060	718,440
Nickel	—	—	5,186,155	6,530,619
	lb.	—	44,792,209	46,023,570
	\$	—	74,802,988	71,796,769
Platinum group	—	—	41,120	449,610
	oz t	—	246,658	2,901,293
Selenium	325,573	—	45,649	24,488
	lb.	—	271,155	148,397
Silver	—	—	351,043	318,999
	oz t	—	473,908	421,079
Tantalum (Ta ₂ O ₅)	4,988,967	4,059,261	4,447,316	4,624,208
	\$	6,778,965	—	..
Tellurium	8,331,575	—	9,762,700	8,214,391
	lb.	—	—	..
Tin	—	—	—	..
	\$	—	—	..
Tungsten (WO ₃)	—	3,174,120	—	..
	lb.	—	—	..
Uranium (U ₃ O ₈)	—	—	—	..
	\$	—	—	..
Yttrium (Y ₂ O ₃)	—	—	—	..
	lb.	—	—	..
Zinc	237,225,560	339,741,000	2,488,284,385	2,499,469,025
	\$	45,241,287	474,540,715	418,161,166
NON-METALLICS	\$			
Arsenious oxide	13,006,476	—	513,488,411	500,826,829
	lb.	—	—	100,000
	\$	—	—	11,000
Asbestos	101,888	—	1,687,051	1,634,579
	ton	13,006,476	206,088,535	203,999,244
Barite	—	—	77,261	120,765
	ton	—	804,096	1,060,543
Diatomite	—	—	..	..
	ton	—	..	..
Feldspar	—	—	11,684	10,774
	ton	—	232,383	216,039
Fluorspar	—	—	—	..
	ton	—	5,432,151	2,819,091
Gemstones	—	—	703,725	167,760
	lb.	—	305,218	196,332
Gypsum	—	—	8,099,480	6,702,100
	ton	—	19,335,891	15,082,700
Helium	—	—	..	..
	Mcf	—	..	..
Magnesitic dolomite and brucite	—	—	..	..
	ton	—	2,928,942	2,673,053
Nepheline syenite	—	—	559,483	517,190
	ton	—	5,902,063	6,206,014
Nitrogen	—	—	..	..
	Mcf	—	..	..
Peat moss	—	—	375,725	337,324
	ton	—	13,612,326	11,803,436
Potash (K ₂ O)	—	—	3,852,120	3,999,511
	ton	—	135,512,850	134,955,000
Pyrite, pyrrhotite	—	—	125,897	317,948
	ton	—	456,157	1,161,800

12.8 Detailed mineral production, by province, 1972 with totals for 1971 (concluded)

Mineral	Province or territory			
	Yukon Territory	Northwest Territories	Canada	
			1972	1971
NON METALLICS (concluded)				
Quartz	ton	—	2,663,836	2,553,884
	\$	—	9,536,318	7,411,354
Salt	ton	—	5,416,925	5,541,901
	\$	—	40,143,665	40,110,708
Soapstone, talc, pyrophyllite	ton	—	80,946	65,562
	\$	—	1,462,507	1,060,136
Sodium sulphate	ton	—	507,275	481,919
	\$	—	6,200,598	7,064,250
Sulphur, in smelter gas	ton	—	678,844	618,487
	\$	—	5,118,483	4,632,467
Sulphur, elemental	ton	—	3,635,631	3,149,280
	\$	—	19,587,807	21,299,520
Titanium dioxide, etc.	ton	—	—	—
	\$	—	40,828,421	39,064,142
FUELS	\$	278,800	2,367,553,821	2,014,409,996
Coal	ton	—	20,709,316	18,432,199
	\$	—	150,600,310	121,727,177
Natural gas	mcf	2,599,543	2,913,537,215	2,499,023,600
	\$	278,800	397,185,830	342,548,891
Natural gas by-products	bbl	—	108,586,704	85,678,080
	\$	—	250,940,075	193,191,039
Oil, crude	bbl	890,067	561,976,934	492,739,049
	\$	1,059,180	1,568,827,606	1,356,942,889
STRUCTURAL MATERIALS				
Clay products	\$	—	569,727,601 ¹	512,478,366 ^a
	\$	—	52,347,688	48,583,262
Cement	ton	—	9,975,762	9,066,795
	\$	—	209,221,337	191,244,394
Lime	ton	—	1,730,311	1,598,254
	\$	—	26,732,421	23,485,637
Sand and gravel	ton	—	225,194,000 ¹	213,291,000 ^a
	\$	—	178,100,000 ¹	152,628,000 ^a
Stone	ton	—	80,202,524	73,514,842
	\$	—	103,326,155	96,537,073
Total 1972	\$	106,780,867	6,403,182,347 ¹	...
Total 1971	\$	93,110,570	115,554,416	5,968,002,192 ^a

¹Includes 1,578,000 tons of sand and gravel valued at \$1,097,000 produced in Prince Edward Island.^aIncludes 1,554,000 tons of sand and gravel valued at \$978,000 produced in Prince Edward Island.

12.9 Producers' shipments of copper, by province, and total value, 1966-72

Year	Province or territory					
	Newfoundland tons	Nova Scotia tons	New Brunswick tons	Quebec tons	Ontario tons	Manitoba tons
1966	19,393	115	7,089	171,999	202,976	31,315
1967	21,965	28	5,786	166,385	276,146	29,560
1968	23,299	140	8,265	167,601	290,618	34,583
1969	20,464	19	6,791	160,068	238,810	37,097
1970	15,193	27	8,022	172,642	295,092	47,906
1971	13,980	16	10,266	184,823	302,370	55,264
1972	9,513	—	10,310	176,432	289,723	59,832
	Saskatchewan tons	British Columbia tons	Yukon Territory tons	Northwest Territories tons	Canada Shipments tons	Value \$'000
1966	19,561	52,880	—	748	506,076	453,524
1967	22,975	86,319	3,584	566	613,314	582,585
1968	22,081	80,561	5,299	866	633,313	607,944
1969	18,230	83,708	7,433	626	573,246	588,281
1970	19,473	105,822	7,880	660	672,717	779,242
1971	11,146	140,310	2,566	689	721,430	760,016
1972	12,546	233,506	874	567	793,303	806,427

12.10 Producers' shipments of nickel, by province, and total value, 1966-72

Year	Quebec tons	Ontario tons	Manitoba tons	Saskatchewan tons	British Columbia tons	Yukon Territory tons	Canada Quantity tons	Value \$'000
1966	3,975	160,214	57,812	15	1,594	—	223,610	377,479
1967	1,622	190,059	54,714	162	2,090	—	248,647	463,140
1968	886	203,747	57,923	144	1,658	—	264,358	528,236
1969	155	146,781	64,920	266	1,489	—	213,611	481,055
1970	801	224,255	79,121	—	1,704	—	305,881	830,167
1971	748	215,754	76,568	—	1,271	—	294,341	800,064
1972	305	189,428	66,227	—	1,620	1,407	258,987	717,485

12.11 Iron ore shipments and production of pig iron and steel ingots and castings, 1966-72

Year	Iron ore shipments						Production of pig iron '000 tons	Production of steel ingots and castings '000 tons
	Newfoundland (incl. Labrador) '000 tons	Quebec '000 tons	Ontario '000 tons	British Columbia '000 tons	Canada Quantity '000 tons	Value \$ '000		
1966	16,546	13,848	8,144	2,152	40,691	431,659	7,217	10,020
1967	16,982	14,532	8,650	2,154	42,318	470,122	6,951	9,701
1968	19,705	14,736	10,907	2,095	47,443	532,694	8,322	11,198
1969	14,716	12,779	10,517	2,042	40,054	454,076	7,431	10,048
1970	23,559	15,048	11,828	1,879	52,314	588,631	9,069	12,250
1971	21,877	12,367	11,179	1,930	47,352	555,136	8,635	12,177
1972	18,072	11,615	11,755	1,256	42,698	489,023	9,364P	13,073P

Quantities are in short tons.

12.12 Producers' shipments of lead from Canadian ores, by province, and total value, 1966-72

Year	Province or territory					
	Newfoundland tons	Nova Scotia tons	New Brunswick tons	Quebec tons	Ontario tons	
1966	21,754	1,488	51,864	3,909	1,985	
1967	19,940	397	47,016	2,882	5,529	
1968	18,914	2,600	54,350	2,936	12,900	
1969	22,207	2,735	51,092	1,558	12,097	
1970	17,730	1,299	62,675	2,159	11,960	
1971	13,481	415	65,405	647	8,915	
1972	12,202	—	45,490	1,676	10,605	
	Manitoba tons	British Columbia tons	Yukon Territory tons	Northwest Territories tons	Canada Quantity tons	Value \$ '000
1966	557	105,747	7,988	105,330	300,622	89,827
1967	1,785	103,827	7,650	127,377	317,963 ¹	89,030
1968	1,477	115,586	3,611	125,138	340,175 ¹	91,439
1969	560	105,036	14,028	106,457	318,632 ¹	96,673
1970	505	107,419	65,835	119,603	389,185	123,138
1971	201	123,964	108,668	83,814	405,510	109,488
1972	196	97,575	111,461	90,220	369,425	113,990

¹Includes 1,560 tons of producers' shipments from Saskatchewan in 1967, 2,663 tons in 1968 and 2,862 tons in 1969.**12.13 Producers' shipments of zinc, by province, and total value, 1966-72**

Year	Province or territory					
	Newfoundland tons	Nova Scotia tons	New Brunswick tons	Quebec tons	Ontario tons	Manitoba tons
1966	34,160	678	142,395	293,148	82,395	34,967
1967	34,851	23	151,357	245,883	268,532	36,258
1968	36,729	113	135,429	213,153	346,758	45,531
1969	32,903	132	152,728	198,531	360,286	48,889
1970	29,913	—	161,094	205,030	340,242	39,463
1971	20,833	—	161,514	174,419	365,725	24,986
1972	26,582	—	174,536	163,244	394,891	45,607
	Saskatchewan tons	British Columbia tons	Yukon Territory tons	Northwest Territories tons	Canada Quantity tons	Value \$ '000
1966	28,909	152,562	5,725	189,167	964,106	291,160
1967	28,412	131,415	4,738	209,982	1,111,453	322,099
1968	29,012	146,098	2,653	203,915	1,159,392	326,949
1969	25,143	148,333	16,531	224,148	1,207,624	367,842
1970	21,833	137,795	77,983	238,558	1,251,911	398,859
1971	8,647	152,726	116,567	224,317	1,249,734	418,161
1972	16,625	134,174	118,613	169,871	1,244,142	474,541

12.14 Producers' shipments of gold, by province, and total value, 1966-72

Year	Province or territory						
	Newfoundland oz t	Nova Scotia oz t	New Brunswick oz t	Quebec oz t	Ontario oz t	Manitoba oz t	Saskatchewan oz t
1966	25,667	20	1,953	935,459	1,660,750	64,565	42,678
1967	27,258	1	1,421	835,190	1,495,385	53,945	47,895
1968	7,803	3	2,202	768,068	1,379,779	39,155	44,970
1969	8,982	13	1,396	761,370	1,229,666	28,011	39,562
1970	6,811	—	5,120	703,015	1,162,042	34,642	44,889
1971	7,341	—	4,236	646,839	1,133,987	30,063	25,960
1972	14,069	42	3,205	539,669	1,019,303	38,032	30,527

12.14 Producers' shipments of gold, by province, and total value, 1966-72 (concluded)

Year	Province or territory					
	Alberta oz t	British Columbia oz t	Yukon Territory oz t	Northwest Territories oz t	Canada Quantity oz t	Value \$ '000
1966	182	120,705	43,466	424,029	3,319,474	125,177
1967	146	126,823	17,900	380,304	2,986,268	112,732
1968	146	124,422	24,167	352,306	2,743,021	103,439
1969	133	117,792	29,682	328,502	2,545,109	95,925
1970	152	101,197	17,862	332,844	2,408,574	88,057
1971	79	89,413	14,473	308,339	2,260,730	79,903
1972	3	122,159	4,079	307,479	2,078,567	119,742

12.15 Producers' shipments of silver, by province, and total value, 1966-72

Year	Average price per oz t (Canadian funds) ¢	Province or territory					
		New- foundland oz t	Nova Scotia oz t	New Brunswick oz t	Quebec oz t	Ontario oz t	Manitoba oz t
1966	139.9	1,097,425	540,663	3,108,669	5,214,146	10,900,204	547,797
1967	173.2	1,073,153	89,238	3,017,416	4,659,232	14,309,391	629,311
1968	231.3	895,706	368,389	3,654,079	3,986,371	21,844,592	616,954
1969	193.1	1,024,639	267,585	4,058,976	4,334,867	22,260,439	462,763
1970	185.0	793,402	71,668	4,577,956	4,261,959	19,876,430	660,755
1971	156.0	563,604	55,292	5,057,627	4,378,011	18,681,633	694,298
1972	167.0	572,928	7	3,906,470	3,558,027	19,587,694	808,376

	Saskat- chewan oz t	British Columbia oz t	Yukon Territory oz t	Northwest Territories oz t	Canada Quantity oz t	Value \$ '000
1966	603,358	5,548,823	4,194,580	1,662,192	33,417,874 ¹	46,752
1967	605,215	6,082,617	3,869,374	1,980,228	36,315,189 ¹	62,898
1968	695,893	7,121,250	2,077,987	3,751,563	45,012,797 ¹	104,115
1969	649,699	5,760,534	2,685,060	2,026,367	43,530,941 ¹	84,015
1970	491,953	6,511,316	4,240,709	2,764,642	44,250,804 ¹	81,864
1971	238,763	7,674,186	5,747,703	2,932,446	46,023,570 ¹	71,797
1972	384,443	6,926,036	4,988,967	4,059,261	44,792,209	74,803

¹Includes relatively small quantities produced in Alberta.**12.16 Quantity and value of producers' shipments of uranium (U₃O₈), by province, 1966-72**

Year	Ontario		Saskatchewan		Canada	
	Quantity '000 lb.	Value \$ '000	Quantity '000 lb.	Value \$ '000	Quantity '000 lb.	Value \$ '000
1966	5,876	42,758	1,988	11,577	7,864	54,335
1967	5,451	41,418	2,026	11,604	7,476	53,022
1968	5,361	39,164	2,041	13,121	7,402	52,285
1969	6,677	40,307	..	12,843	7,708	53,151
1970	6,677	..	1,532	..	8,209	..
1971	7,010	..	1,204	..	8,214	..
1972	8,428	..	1,335	..	9,763	..

12.17 Quantity and value of producers' shipments of asbestos, 1966-72

Year	Quantity '000 tons	Value \$ '000
1966	1,489	163,655
1967	1,452	165,119
1968	1,596	185,025
1969	1,611	195,211
1970	1,662	208,147
1971	1,635	203,999
1972	1,687	206,089

12.18 Producers' shipments of potash, 1966-72

Year	K ₂ O eq. '000 tons	Value \$ '000
1966	1,990	62,665
1967	2,383	67,395
1968	2,918	65,121
1969	3,492	69,383
1970	3,420	108,695
1971	4,000	134,955
1972	3,852	135,513

12.19 Producers' shipments of salt, by province, and total value, 1966-72

Year	Nova Scotia '000 tons	Ontario '000 tons	Manitoba '000 tons	Saskatchewan '000 tons	Alberta '000 tons	Canada	
						Quantity '000 tons	Value \$'000
1966	475	3,782	27	85	123	4,492	23,846
1967	447	4,673	25	90	126	5,361	27,808
1968	474	4,144	27	99	120	4,864	31,170
1969	501	3,760	43	107	247	4,658	30,406
1970	684	4,158	29	203	284	5,359	36,098
1971	889	4,171	27	209	245	5,542	40,111
1972	813	4,038	31	252	284	5,417	40,144

12.20 Quantity and value of sulphur produced from smelter gases and in pyrite and pyrrhotite shipments, and of elemental sulphur sales, 1966-72

Year	Sulphur in smelter gases		Producers' shipments pyrite and pyrrhotite		Value \$'000	Sales of elemental sulphur ¹	
	Quantity ² '000 tons	Value \$'000	Gross weight ³ '000 tons	Sulphur content '000 tons		Quantity '000 tons	Value \$'000
1966	500	6,051	327	162	1,139	2,042	40,254
1967	546	6,702	378	182	1,703	2,499	68,614
1968	666	8,915	314	156	2,286	2,581	79,964
1969	676	7,953	376	171	2,219	2,973	60,726
1970	706	7,433	363	176	1,699	3,548	28,354
1971	618	4,632	318	155	1,162	3,149	21,300
1972	679	5,118	126	61 ^e	456	3,636	19,588

¹Recovered from sour natural gas and nickel sulphide ores.²Includes sulphur in acid made from roasting zinc sulphide concentrates at Arvida and Port Maitland.³Excludes pyrite and pyrrhotite used to produce iron residues or sinter.**12.21 Producers' shipments of gypsum, by province, and total value, 1966-72**

Year	Newfoundland '000 tons	Nova Scotia '000 tons	New Brunswick '000 tons	Ontario '000 tons	Manitoba '000 tons	British Columbia '000 tons	Canada	
							Quantity '000 tons	Value \$'000
1966	460	4,503	108	565	134	206	5,976	12,312
1967	439	3,757	89	536	134	220	5,175	11,348
1968	435	4,441	85	571	152	243	5,927	11,825
1969	469	4,755	81	622	165	281	6,374	14,995
1970	491	4,775	73	537	172	270	6,319	14,199
1971	561	4,890	77	699	130	345	6,702	15,083
1972	735	5,999	75	726	176	388	8,099	19,336

12.22 Production and exports of nepheline syenite, 1966-72

Year	Production		Exports	
	Quantity '000 tons	Value \$'000	Quantity '000 tons	Value \$'000
1966	367	4,110	264	3,098
1967	402	4,753	308	3,532
1968	427	4,738	323	4,090
1969	501	5,935	396	5,120
1970	487	5,801	383	5,063
1971	517	6,206	410	5,330
1972	559	5,902	438	5,722

12.23 Producers' shipments and value, imports, exports and apparent consumption of cement, 1966-72

Year	Shipments (sold or used)		Imports '000 tons	Exports ¹ '000 tons	Apparent consumption ² '000 tons
	Quantity '000 tons	Value \$'000			
1966	8,931	156,301	51	407	8,574
1967	7,995	143,150	44	328	7,711
1968	8,166	152,004	52	367	7,851
1969	8,250	162,091	53	634	7,669
1970	7,946	155,740	97	567	7,477
1971	9,067	191,244	56	888	8,235
1972	9,976	209,221	43	1,254	8,765

¹Standard portland cement.²Shipments plus imports less exports.

12.24 Producers' shipments of sand and gravel, by province, and total value, 1966-72

Year	Province or territory					
	Newfoundland '000 tons	Prince Edward Island '000 tons	Nova Scotia '000 tons	New Brunswick '000 tons	Quebec '000 tons	Ontario '000 tons
1966	3,599	661	8,109	5,367	45,877	94,124
1967	3,144	1,328	6,056	7,605	45,013	94,751
1968	3,812	383	9,380	6,362	42,956	84,096
1969	3,957	902	9,167	3,994	41,500	82,657
1970	4,335	827	7,187	6,883	36,795	82,877
1971	5,564	1,554	6,004	4,985	41,605	77,631
1972	5,433	1,578	9,896	7,561	44,993	76,380
	Manitoba '000 tons	Saskatchewan '000 tons	Alberta '000 tons	British Columbia '000 tons	Canada Quantity '000 tons	Value \$'000
1966	9,676	8,314	12,886	24,295	212,909	149,826
1967	10,289	9,671	14,187	23,168	215,213	146,698
1968	9,564	9,168	13,600	25,914	205,235	129,501
1969	8,142	7,673	14,904	28,685	201,581	122,159
1970	14,930	8,963	16,042	23,817	202,656	133,558
1971	16,695	11,321	18,679	29,253	213,291	152,628
1972	14,763	8,512	20,556	35,522	225,194	178,100

12.25 Producers' shipments of stone¹, by province, and total value, 1966-72

Year	Province or territory					
	Newfoundland '000 tons	Prince Edward Island '000 tons	Nova Scotia '000 tons	New Brunswick '000 tons	Quebec '000 tons	
1966	153	200	605	3,544	57,976	
1967	240	725	585	3,265	47,764	
1968	877	440	820	2,138	34,952	
1969	190	—	1,016	1,209	32,009	
1970	182	—	1,192	1,321	30,144	
1971	204	—	1,643	1,431	37,515	
1972	204	—	1,047	1,901	41,384	
	Ontario '000 tons	Manitoba '000 tons	Alberta '000 tons	British Columbia '000 tons	Canada Quantity '000 tons	Value \$'000
1966	25,703	2,023	144	3,537	93,887	112,021
1967	25,745	2,013	142	3,528	84,007	103,888
1968	28,636	2,306	221	5,551	75,940	95,658
1969	27,035	699	315	5,006	67,477	88,186
1970	27,673	1,273	166	3,371	65,323	87,976
1971	28,238	1,012	184	3,287	73,515	96,537
1972	31,091	610	196	3,769	80,203	103,326

¹Excludes limestone used in Canadian lime and cement industries.**12.26 Value (total sales) of producers' shipments of clay products made from domestic clays, by province, 1966-72 (thousand dollars)**

Year	Province or territory					
	Newfoundland	Nova Scotia	New Brunswick	Quebec	Ontario	
1966	173	1,525	619	6,278	25,800	
1967	200	1,390	567	5,611	27,451	
1968	152	1,506	630	5,889	30,629	
1969	120	1,625	585	6,432	31,673	
1970	37	2,816	940	8,160	28,649	
1971	80	1,758	627	6,119	29,815	
1972	209	1,682	667	7,403	31,570	
	Manitoba	Saskatchewan	Alberta	British Columbia	Canada	
1966	487	1,395	3,423	3,256	42,956	
1967	526	1,158	4,117	3,336	44,357	
1968	451	1,455	4,425	3,585	48,721	
1969	346	1,718	4,640	4,027	51,166	
1970	346	1,819	4,657	4,367	51,791	
1971	322	998	3,833	5,032	48,583	
1972	667	1,488	4,290	4,372	52,348	

12.27 Quantity and value of production¹ of crude oil, by province, 1966-72

Year	Province or territory							
	New Brunswick		Ontario		Manitoba		Saskatchewan	
	Quantity '000 bbl	Value \$'000	Quantity '000 bbl	Value \$'000	Quantity '000 bbl	Value \$'000	Quantity '000 bbl	Value \$'000
1966	7	10	1,324	4,230	5,231	13,057	93,218	211,797
1967	9	12	1,240	3,524	5,585	13,998	92,535	211,722
1968	8	11	1,151	3,167	6,205	15,570	91,889	206,943
1969	9	13	1,162	3,117	6,205	15,615	87,414	196,067
1970	10	14	1,048	2,840	5,908	14,858	89,487	199,770
1971	10	13	958	2,727	5,605	15,413	88,459	217,829
1972	9	12	878	2,499	5,257	14,588	86,787	214,057
	Alberta		British Columbia		Northwest Territories		Canada	
	Quantity '000 bbl	Value \$'000	Quantity '000 bbl	Value \$'000	Quantity '000 bbl	Value \$'000	Quantity '000 bbl	Value \$'000
1966	203,339	522,989	16,681	36,361	750	862	320,549	789,306
1967	231,543	591,710	19,697	44,841	678	871	351,288	866,678
1968	257,281	660,485	22,206	50,205	752	907	379,492	937,288
1969	290,012	740,435	25,387	58,357	801	967	410,990	1,014,571
1970	338,403	876,887	25,478	60,943	846	1,142	461,180	1,156,454
1971	371,501	1,055,769	25,263	63,984	944	1,208	492,739	1,356,943
1972	444,220	1,272,903	23,936	63,710	890	1,059	561,977	1,568,828

¹ Gross production of crude oil and condensate, less returned to formation.**12.28 Natural gas production¹, by province and total value, 1966-72**

Year	Province or territory									
	New Brunswick		Quebec		Ontario		Saskatchewan		Alberta	
	Quantity MMcf	Value \$'000	Quantity MMcf	Value \$'000	Quantity MMcf	Value \$'000	Quantity MMcf	Value \$'000	Quantity MMcf	Value \$'000
1966	97	90	—	—	15,537	5,940	49,868	6,123	1,090,691	146,609
1967	104	88	59	9	14,229	5,431	49,976	6,638	1,181,928	161,807
1968	113	97	138	21	12,066	4,599	56,772	7,211	1,367,682	186,034
1969	107	95	138	21	11,332	4,275	58,656	7,244	1,605,658	218,106
1970	131	108	166	25	17,064	6,488	62,594	7,332	1,870,507	265,912
1971	105	91	170	26	16,260	6,333	71,166	8,952	2,067,247	290,672
1972	97	57	187	26	12,375	4,768	68,912	8,932	2,385,440	338,709
	British Columbia		Yukon Territory		Northwest Territories		Canada			
	Quantity MMcf	Value \$'000	Quantity MMcf	Value \$'000	Quantity MMcf	Value \$'000	Quantity MMcf	Value \$'000	Quantity MMcf	Value \$'000
1966	185,591	19,403	—	—	46	20	1,341,831	178,184	—	—
1967	225,399	23,993	—	—	41	17	1,471,735	197,983	—	—
1968	259,867	27,869	—	—	43	18	1,696,680	225,848	—	—
1969	301,998	32,573	—	—	44	18	1,977,932	262,332	—	—
1970	326,565	35,200	—	—	82	35	2,277,109	315,100	—	—
1971	342,909	36,269	869	90	298	117	2,499,024	342,549	—	—
1972	432,132	43,043	2,600	279	11,795	1,372	2,913,537	397,186	—	—

¹ Gross production, less field-flared and waste and re-injected.**Sources**

12.1 - 12.28 Manufacturing and Primary Industries Division, Industry Statistics Branch, Statistics Canada.

Chapter 13

Energy

Energy plays a proportionately larger role in Canada than in many other countries due to the facts of geography and climate. Canadians require a comparatively large amount of energy per capita to provide the food, shelter, clothing, transportation and communications needed to live in reasonable physical comfort. An average Canadian's total energy use is the equivalent of 55 barrels of oil a year, the second highest of any nation in the world. Canadians have become accustomed to a high degree of personal mobility and local and long distance communication, all of which require ample supplies of energy.

The international energy crisis of 1973, however, resulted in a reassessment of the rate and nature of energy use in Canada. There was increasing interest in the conservation of energy, greater attention to efficiency in the production and conversion of energy and a questioning of the amount of energy being allocated to the export market.

While the energy resource potential in Canada is considered to be very large in relation to expected future domestic requirements, there was evidence in 1973 of increasing concern about the decline in the ratio of proven reserves to current production, particularly for oil. A forecast of the country's energy requirements made in 1973 indicated that Canada's requirements by the year 2000 are likely to be more than four times that of the early 1970s; the per capita energy consumption would be 2.7 times that of 1970.

Federal energy policies. Certain basic national objectives have shaped present energy policies. These relate to adequate supplies of energy at competitive prices; safe-guarding national security; encouragement of energy resource development; export of surplus supplies under terms that benefit the national interest; acquisition of energy supplies from abroad when they are more economic than domestic sources; and alignment of energy policy objectives with other national objectives such as those relating to Canadian ownership and the protection of the natural environment. The balance of priorities between energy producer and consumer needs, regional interests, Canada's international competitive position and domestic prices for consumer goods are among the major questions to be weighed in formulating energy policies for the country as a whole.

The federal government's report *An energy policy for Canada — Phase I* published in 1973 presented the results of studies pertinent to the development of energy policies. It included an inventory of Canada's energy resources, estimates of future energy demand and assessments of the economic impact of alternative development options. The report represented a knowledge base for policy decisions relative to energy at a time of considerable change throughout the world in the circumstances of energy supply and demand. The energy crisis of 1973, which centred on world oil supplies and rapidly increasing prices, served to focus immediate attention on the importance of new national energy policies reflecting the changing international circumstances which were beginning to have a marked effect on energy supply and pricing within Canada.

Federal energy policies are developed under the direction of the Minister of Energy, Mines and Resources. His department, which serves as the co-ordinator of energy policy development, the National Energy Board, the Atomic Energy Control Board, Atomic Energy of Canada Limited, Eldorado Nuclear Limited, the Energy Supplies Allocation Board, and many other departments and agencies have responsibilities relative to energy policy matters. The development of new energy policies must therefore take into consideration the needs and objectives of all aspects of national life.

The establishment of the new Energy Supplies Allocation Board resulted from the need to provide a means to conserve the supplies of petroleum products within Canada during periods of national emergency caused by shortages or market disturbances affecting the national security and welfare and the economic stability of Canada. The developing world oil crisis of 1973 pointed to the need for such a Board and Parliament approved the necessary legislation on January 11, 1974.

Since its establishment in 1959 the National Energy Board, which reports to Parliament through the Minister of Energy, Mines and Resources, has pursued two main functions, regulatory (quasi-judicial and administrative) and advisory, to ensure the best use of Canada's

energy resources. Its quasi-judicial functions pertain to granting certificates for construction of interprovincial and international pipelines and international power lines; issuing licences to export power or energy-related commodities or to import gas or motor gasoline; and regulating rates, tolls and tariffs of oil and gas pipelines under its jurisdiction. Regulatory functions of an administrative character include safety orders regarding pipelines and approval of pipeline utility crossings.

Administration of the National Oil Policy to foster the development and use of oil resources within Canada involves protecting indigenous crude oil products in domestic markets, to which the Board's motor gasoline import licensing is related, and allowing export of surplus oil when an adequate determination has been made of Canadian requirements.

Regular examinations of the accounts and records of gas and oil pipeline companies are conducted to ensure conformity with the Board's Uniform Accounting Regulations and to secure the detailed financial information essential to administering the regulatory functions of the Board. Special studies of a financial nature are carried out and close liaison maintained with national and international financial communities.

In early February 1973, the Board recommended that export controls be introduced on crude oil and related hydrocarbons. These controls became effective on March 1. On June 15 export controls were extended to cover motor gasoline and middle distillates (diesel fuel, kerosene and heating oil); and to propane, butanes and heavy fuel oil on October 15, 1973.

13.1 Canada's energy resources

Known uranium resources are estimated to be 400,000 tons of uranium oxide available at prices up to \$15 a lb. Canada's cumulative domestic needs to the year 2000 could total 100,000 tons, while committed exports amount to some 60,000 tons. Canada has a significant surplus over predicted requirements of low- to medium-cost uranium already proved or indicated. There is an estimated potential of an additional 500,000 tons of uranium oxide available in the same price range. The cost of uranium plays only a minor role in the total cost of nuclear power; an increase in the cost of uranium from the present \$6 a lb. to as high as \$50 a lb., for example, would only raise electricity costs from a CANDU reactor by two mills from the present seven mills a kilowatt hour.

In the case of oil and gas, there is considerable uncertainty about how large the resource base actually is. Most of the potential resources are expected to be found in the, as yet, largely unexplored frontier areas. Estimates made by the federal government in 1972 and 1973 of potential recoverable conventional oil were 134 billion and 99 billion barrels (bbl); of this, the proven reserve was slightly less than 10 billion bbl at the end of 1973. The Alberta oil sands are very large but present technology and foreseeable prices would restrict recovery to 10% to 15% of the ultimate recoverable reserves of some 250 billion bbl. Proved natural gas reserves yet to be produced total close to 53 trillion cubic feet (MMMMcf). Estimates of gas potential, based on the 1972 and 1973 assessment, range from 906 to 783 MMMMcf.

Canada has extensive coal reserves estimated at about 120 billion tons of which about 118 billion tons are in British Columbia, Alberta and Saskatchewan. These are geological estimates of reserves in place but even on the basis of economic mineability criteria Canada has sufficient mineable coal for the foreseeable future at substantially greater production levels. These reserves are almost all in western Canada; most of the economic Maritime coal has been extracted.

At best, hydro-electric energy production might double to about 310 billion kilowatt hours by 1990. Growth of this source will be moderated thereafter by competition from nuclear power.

Energy supply and demand. Primary energy consumption in Canada has tripled during the past 25 years, representing an average annual increase of 4.5%. Oil and gas now meet almost two thirds of total energy requirements compared with less than one quarter 25 years ago, while coal's share has declined from one half to one tenth. The other major primary source is hydro-electricity which has been meeting about one quarter of total energy needs since the mid-1950s. The only significant change in the energy mix in the 1970s has been the introduction of nuclear energy which in 1973 accounted for about 1.5% of primary energy consumption and promises to grow steadily.

The energy industries are a major component of the Canadian economy with a primary production value of \$5.1 billion in 1973. In 1973 energy trade had a favourable balance of

\$1,090 million compared with a deficit of \$300 million in 1960. The energy industries continue to be major growth industries and in 1973 accounted for almost one fifth of total capital investment in Canada. Their importance in regional development is illustrated by the \$4 billion of oil and gas revenues that accrued to the Alberta government in the period 1947-73 and by the industrial development that has been stimulated throughout western Canada.

The growth and scale of oil supply and demand is shown in Table 13.1. Exports of crude oil grew rapidly during the 10-year period to 1972 but there were indications of a levelling off in 1973 leading to a possible decline throughout the rest of this decade. Domestic demand for oil grew at an average rate of 5.5% during 1962-72. The rate in 1973 was close to 6%.

Domestic demand for natural gas and exports tripled in the 10-year period to 1972 (Table 13.2). Exports have now stabilized as no new export permits have been granted since 1971. The annual increase in domestic demand for natural gas in 1973 was 9.8%, somewhat lower than the 11.5% annual average of the previous 10 years.

Table 13.3 illustrates coal and coke supply and demand trends since 1962. The large increase in coal exports over the 10-year period to 1972, particularly in 1970 and 1971 was almost equivalent to the production growth. Imports increased substantially to meet the requirements of the Ontario market. Total demand growth in 1973 was only slightly lower than the average annual increase in the previous 10 years.

Electric energy supply and demand trends are indicated in Table 13.4. Exports of electric energy have increased more rapidly than imports but both remain comparatively small. Until 1973, exports never exceeded about 4% of generation. Domestic electric energy demand in Canada increased at an average annual rate of 7% in the period 1962-72 but rose to 7.8% in 1973.

13.2 Uranium and nuclear energy

Total western world energy requirements in 1990 are expected to be about 2.7 times those in 1970. The annual growth rate for energy of all kinds is forecast at 5%, for electric energy at 6%, and for energy provided by nuclear plants at rates varying from 32% in the earlier years to 13% in the later years. Nuclear energy's share of total world energy requirements is expected to increase from less than 1% in 1970 to about 21% in 1990, largely at the expense of coal but also partly as a substitute for natural gas in the North American market.

The heavy-water-moderated power reactor concept offers the prospect of abundant, relatively low-cost electric energy to meet this demand. The Canadian CANDU (Canada-Deuterium-Uranium) power reactor uses heavy water (deuterium oxide) as a moderator for slowing, or "moderating", the neutrons released by nuclear fission. The high neutron economy obtained by using this moderator with neutron-transparent core materials (zirconium alloys) means that natural uranium may be used as fuel. The CANDU system is, however, sufficiently flexible that enriched uranium, plutonium recovered from spent fuel, or thorium may be incorporated into its fuel system.

An essential component of the CANDU nuclear reactor system is heavy water, the compound formed from two atoms of deuterium (or heavy hydrogen) and one of oxygen. It is similar to ordinary water both chemically and physically but with a density about 10% greater. It has special nuclear properties, however, which enables a nuclear reactor with heavy water as a moderator to use natural uranium. Reactors using light water must be fuelled with enriched uranium. The production of heavy water has been a critical item in the Canadian nuclear power program. In 1973 the 800-ton-a-year Bruce heavy water production plant went into operation and by the end of the year was producing at about 80% of its design capacity. Ontario Hydro exercised its option to purchase the plant from Atomic Energy of Canada Limited and announced its intention to build three more such plants at the Bruce site. In Nova Scotia the rehabilitation of the Glace Bay plant continued with start-up scheduled for 1975 and the operation of the Canadian General Electric Port Hawkesbury plant improved considerably after modifications. At the end of 1973 the federal government announced that a new 800-ton-a-year plant would be built by Atomic Energy of Canada Limited at the Gentilly site in Quebec.

In August 1973, the Canadian government announced a sale to the Tohoku Electric Power Company of Japan of 1,000 short tons of uranium oxide from the government owned general stockpile and from the government-Denison joint venture stockpile. Delivery of uranium under the agreement will take place over the period 1977 to 1981.

13.3 Oil

13.3.1 Reserves

At the end of 1973 Canada's proven reserves of recoverable conventional crude oil and natural gas liquids (propane, butanes and pentanes plus) amounted to 9.3 billion barrels (bbl) and reserves of recoverable natural gas were 52.5 trillion cubic feet (MMMMcf). Most of these reserves are located in Alberta and the estimates do not include reserves attributed to the Athabasca tar sands or recently discovered reserves in Canada's frontier areas. At current production levels these proven reserves are sufficient to continue to supply oil for 12 years and gas for 17 years.

There was a net drop in oil reserves in 1973 for the fourth successive year and for the second year there was a significant decline in proven reserves of gas. Canada's ultimate potentially recoverable reserves, as recently estimated by the Geological Survey of Canada, were placed at 99.2 billion bbl of oil and 782.9 MMMMc of gas. Potential reserves include, in addition to amounts already produced and proven, amounts "yet to be discovered on the basis of geological predictions".

According to an appraisal of Alberta's oil sands completed this year by the Alberta Energy Resources Conservation Board, the ultimate recoverable reserves of synthetic crude oil from all of Alberta's bituminous deposits amount to 250 billion bbl. Of this amount, approximately 26.5 billion bbl is considered to be recoverable by open cast mining methods similar to the one now being employed by the Great Canadian Oil Sands Limited's plant near Fort McMurray. The remainder is expected to be eventually recovered by in situ techniques, which are still in the experimental stage for recovery of oil from the deeper formations.

13.3.2 Exploration and development

Exploration in the frontier areas in 1973 continued at a steady pace achieving several more major gas discoveries in the Arctic. As a result, the gas reserves base there has been enlarged to the point where it is now almost economically feasible to transport the gas to southern markets. In the southern areas, exploratory successes were minimal despite a significant increase in drilling activity. This factor, combined with high production rates, was responsible for the further decline in proven reserves of oil and gas. Details of drilling activity by region appear in Table 13.5.

Western provinces. Exploratory and development drilling increased in 1973 because of the incentive provided by the higher prices for oil. Despite this, no new oil discoveries of any substance were made.

The Alberta government introduced two incentive programs designed to encourage exploration. The first provided a system of deductions from royalties and rentals to cover a portion of the drilling costs for new field exploratory wells. Alberta also extended the remission of taxes and royalties on new oil field discoveries to ensure credits for a five-year period on any discovery prior to the end of 1977. In addition, to enhance the recoverable reserves, the province initiated or encouraged the implementation of several major secondary recovery schemes in 1972 and 1973.

The Saskatchewan government announced early in 1973 its intention to form a Crown corporation to explore for oil and gas, concentrating its efforts in the deeper prospects.

Northern regions. Large-scale exploratory efforts in the Mackenzie Delta began in 1969 and since then there have been two oil discoveries and several gas discoveries. Both oil discoveries are located on Tuktoyaktuk Peninsula and although the wells tested significant quantities of oil, subsequent step-out drilling was unsuccessful.

In the Arctic islands, Panarctic Oils Ltd. made its first oil discovery on Ellesmere Island in 1972 when its Romulus exploratory well encountered three separate oil zones. Shortly afterward, Panarctic reported a light oil show on the southern tip of Thor Island. Such indications have spurred the hope of outlining a field of significant dimensions in the near future.

Eastern off-shore region. The Sable Island area where an initial oil and gas discovery was made in 1971 remained promising during 1972 and 1973. Exploratory tests drilled in this area have established the presence of several gas producing zones and an oil zone which was tested at 300 barrels a day (b/d). The full potential of these zones will not be established until the current evaluation program is completed. During 1972, nine wells were drilled on the Grand

Banks but none was successful, although a few were reported to indicate the presence of hydrocarbons.

Eastern provinces. In Ontario during 1972 and 1973 only a few small oil discoveries were made. In Quebec, seven exploratory wells were drilled, all of which were unsuccessful.

13.3.3 Production

Demand for crude oil in 1973 resulted in a record Canadian production year as both export and domestic demand quickened considerably. In the last two months of the year western crude began to move through the Panama Canal to the Montreal refineries as they began to feel the effects of a shortfall in imported oil feedstocks. There was a 17.1% increase in conventional crude production in 1973. Alberta accounted for 83.8% of Canadian crude oil and equivalent production in 1973. The other provinces' production continued the trend of recent years exhibiting a slight decline of 2.8% in 1973 (see Table 13.6).

13.3.4 Transportation

Canadian produced crude oil and equivalent is moved to market over a large network of interconnected oil pipelines extending in either direction from the producing fields in western Canada to a western extremity at Sumas, BC, near Vancouver and a present eastern extremity at Niagara, Ont. Between those points the network serves the Canadian refining markets in British Columbia, Alberta, Saskatchewan, Manitoba and Ontario and US markets located in the Puget Sound, Mid-West, Chicago and Upper New York State areas. In 1972 the mileage of the entire pipeline system was 18,181 miles. Operating statistics of oil pipelines for the period 1969-72 appear in Table 13.7.

The prime components of this system are the trunk lines of the Interprovincial Pipe Line Company and the Trans Mountain Oil Pipe Line Company. Both pipelines start in Edmonton, the centre of the Alberta producing areas, and are fed by a network of gathering pipelines which transport oil to the main trunk lines at Edmonton from as far away as the Zama Lake field in the northwestern corner of Alberta and from as close as Redwater, 32 miles from Edmonton.

In addition to the Edmonton delivery point there are other important connection points in Alberta on the major trunk lines. At Hardisty, 100 miles southeast of Edmonton, Interprovincial receives oil from three sources: the fields adjacent to the Hardisty terminal; the Lloydminster heavy asphaltic crude field which provides a blend of pentanes plus and crude; and, through the Bow River Pipe Line Ltd., oil from the most southerly fields in the province. At Edson, approximately 100 miles to the west of Edmonton on the Trans Mountain pipeline, an interconnection with the Peace River pipeline brings oil from fields located in northwestern Alberta.

The other prime mover of oil from Alberta is the Aurora pipeline. This trunk line, with a length of only one mile within Canada, receives 95,000 b/d of crude oil and equivalent from the Rangeland gathering system and moves it to Billings, Montana, both for refining and further shipment to points in the US mid-west.

Outside Alberta, the Interprovincial pipeline receives and transports Saskatchewan and Manitoba crude oil production. The main gathering systems deliver a blend of crude oil and pentanes plus from the Lloydminster area to Kerrobert on the Interprovincial system. Southwest Saskatchewan crude oil joins the Interprovincial pipeline at Regina and southeast Saskatchewan crude at Cromer, Man. which is also the junction for the delivery of southwestern Manitoba crude oil.

In British Columbia a gathering pipeline system carries crude over a distance of 500 miles from fields near Fort St. John to connect with the Trans Mountain system at Kamloops.

Interprovincial Pipe Line Company's system is Canada's largest oil pipeline. It incorporates a wholly-owned subsidiary in the United States, Lakehead Pipe Line Company Incorporated, and in 1972 had a right-of-way of 2,747 miles accommodating 5,350 miles of main pipeline. This was augmented in 1973 with the addition of 142 miles of large-inch looping in western Canada and 28 miles of small-inch looping in southern Ontario. In 1972 the system received 1,121,800 b/d and delivered 1,115,500 b/d, most of it in the form of crude oil. Western Canada and Ontario received 530,200 b/d of this throughput, the remainder was delivered in the US.

Trans Mountain Oil Pipe Line Company has 712 miles of right-of-way and 825 miles of main pipeline. The line passes through some of the most rugged and difficult terrain in North America, crossing several mountain ranges between the terminal at Edmonton before reaching sea level at the refineries at Vancouver and Puget Sound. Nine refineries are now connected to Trans Mountain, five in British Columbia and four in the State of Washington.

The Montreal refining centre is served by a pipeline from tidewater at Portland, Maine. This is the nearest port on the Atlantic seaboard from which tanker-borne crude oil from Venezuela, the Middle East and Africa may be trans-shipped by pipeline to Montreal. This joint system of the Montreal Pipe Line Company and its wholly-owned subsidiary in the United States, Portland Pipe Line Corporation, shortens tanker voyages by eliminating the Atlantic Provinces seaboard, Gulf of St. Lawrence, and St. Lawrence River segments. However, there are excellent deepwater port sites in the Atlantic region and on the St. Lawrence which are now being considered for development as tanker terminals to provide pipeline routes within Canadian territory to Montreal. The Portland-Montreal system consists of 236 miles of right-of-way and 708 miles of main pipeline. Throughput in 1972 was 442,458,000 b/d, all of it crude oil.

The major trunk lines linking the western provinces and Ontario are served by an extensive system of secondary trunk lines and field gathering lines with a combined total mileage of 6,849 miles in 1972. Of this total, British Columbia had 359 miles of secondary trunk lines and 153 miles of field gathering lines; Alberta 2,713 and 1,417; Saskatchewan 1,660 and 362; Manitoba 156 and 10; and Ontario 19 miles of field gathering lines only.

13.3.5 Processing

In 1973, Canada had 40 refineries with a total refining capacity of approximately 1.8 million b/d. Refinery runs were about 1.7 million b/d and this production rate was approximately equal to the total consumption of petroleum products in Canada. Production of Canadian refineries is closely in balance with total market demand although there is some interchange of individual products to and from the United States.

In the past, the location and size of Canada's refineries have been mainly determined by the tendency to locate them close to centres of consumption. Thus approximately 55% of the total capacity is located within the populous regions of southern Ontario and Quebec. Ontario has two main refining centres, in Sarnia and south of Toronto; Quebec has the largest refining centre, in Montreal, as well as a refinery in Quebec City. British Columbia has seven refineries most of them located close to Vancouver.

A more recent trend has been the increase in size of individual refineries to effect economies of scale. Although the average size of individual refineries is increasing all over Canada, this is particularly evident in Alberta, Saskatchewan and Manitoba. These provinces were previously served by a multiplicity of small refineries close to individual cities but many are now being phased out and replaced by two large refineries in Edmonton where they will be close to the main sources of crude in Alberta. They will be of optimum size and will confine any environmental problems to one area, thus facilitating pollution control.

A third factor influencing refinery location has been proximity to deepwater ports in cases where crude input is received by tanker. The economies now being obtained with very large tankers have stimulated the construction of large refineries in the Atlantic Provinces, specifically at Saint John, NB; Point Tupper, NS; and Come By Chance, Nfld. These refineries are located in areas of relatively low population density so that a major proportion of their output is either shipped inland or re-exported.

In 1973, Canadian refineries yielded an average 32% of motor gasoline, 34% of middle distillates including light heating oil, diesel oil and jet fuel and about 20% of heavy fuel oil. Other products included liquefied petroleum gas, petrochemical feedstocks, aviation gasoline, asphalt and lubricating oil. To meet the high yields of light products most refineries are equipped with a catalytic cracker and total installed cracking capacity was equivalent in 1973 to about 23% of the crude distillation capacity. Catalytic reforming amounted to about 15% of crude capacity. This process is principally being used to upgrade gasoline quality but also produces aromatic petroleum chemical feedstocks. To meet the need for high quality low sulphur distillates, hydrogen treating plants have been installed totalling 36% of crude feed and it is common practice to hydrogen treat most or all of the gas oil and light distillates. Six hydrocracking units have been installed in Canada capable of treating 5% of crude feed. This new process is of

value in upgrading heavy fuels to middle distillates which have been in relatively short supply.

While petrochemical plants are distributed widely across Canada — Sarnia, Montreal and Edmonton are the principal centres. At Sarnia three refineries are closely integrated with nine petrochemical companies. The oil refineries supply petroleum gases, naphtha, aromatics, etc. to the chemical companies who convert them to a large number of intermediates as well as final products. Western Canadian natural gas is also pipelined into this complex. The intermediate products produced in these chemical plants include ethylene, propylene, butadiene, aromatics, ethylene oxide, etc. Final products include carbon black, synthetic rubbers, detergent alkylates, polyethylene, polystyrene, polyvinylchloride, ammonia, fertilizers, petroleum additives, and many others. Many of the joint products from the petrochemical plants are sold back directly to the refineries for blending into fuel products. Fuels are also piped directly to the petrochemical plants for process heat and power requirements.

Of major importance to the industry today are the developments aimed at improving the environment. All Canadian refineries have been investing a large percentage of their capital expenditures in conservation equipment to meet stringent new standards. The use of process cooling water is minimized or abandoned entirely in favour of air cooling. What remaining water effluent exists is generally treated not only by gravity separation but by secondary processes such as air flotation, biological oxidation or filtration. The discharge of sulphur dioxide from process heaters is minimized where possible by the use of low sulphur fuels and dispersion aided by very high smoke stacks. The refineries also have the responsibility of producing products designed to minimize pollution by the consumer. The most important aspects of this are the treatment of fuels for sulphur removal and the manufacture of motor gasolines that will minimize automotive emissions.

The pioneer oil sands recovery plant at Fort McMurray includes refining equipment to semi-process the recovered bitumen to a synthetic crude oil. New oil sands plants planned for construction over the next decade will represent a major refinery growth.

Table 13.8 gives details of existing and planned oil refinery capacity in Canada in 1973 with scheduled completion dates for new facilities. In addition, some expansion of existing refineries is already in progress.

13.4 Natural gas

Raw natural gas may vary widely in composition. In addition to the usually predominant methane, varying proportions of ethane, propane, butanes and pentanes plus may be present. Hydrogen sulphide may be so abundant as to be an important source of sulphur. After processing has removed the water content, hydrogen sulphide, pentanes plus and other petroleum gases, the marketable gas consists mainly of methane, some ethane and small amounts of propane and butanes. The heating value of the marketed gas averages about 1000 Btu per cu ft of gas.

The most important use of natural gas is as a fuel for space and water heating. Domestically, it is finding increasing use as fuel in the larger home appliances. In the industrial sector natural gas is being used by the automobile, steel, metal working, glass and food-processing industries and in metallurgical processing where the clean, easily controlled flow of this fuel makes it possible to attain precise desired temperatures for the rolling, shaping, drawing and tempering of steel.

The constituents of natural gas have become major sources of feedstock for the petrochemical industry. Natural gas supplies the basic raw material for ammonia, plastics, synthetic rubber, insecticides, detergents, dyes and synthetic fibres such as nylon, orlon and terylene.

13.4.1 Reserves

Canada's proven reserves of natural gas have been estimated at 119.6 MMMMcf of gas in place, most of it in the western provinces of Alberta and British Columbia. After deducting reservoir losses and processing shrinkage (much of the gas has a hydrogen sulphide content and therefore a high processing shrinkage), 74.1 MMMMcf is estimated as ultimately to be recoverable. Cumulative production to the end of 1973 was 21.6 MMMMcf, leaving 52.5 MMMMcf available to meet future demand. On the basis of 1973 production of marketable gas, the reserves-to-production ratio has declined to 17 years from 23 years in 1970. However, there are very large potential resources yet to be developed in the frontier regions.

13.4.2 Exploration and development

Western provinces. With the prospect of continuing strong demand and increased wellhead prices, producers increased their efforts to develop new reserves. As a result, successful gas well completions in 1972 increased by 38.5% over 1971 to 1,157 wells. Much of the development was in the shallow gas fields of southeastern Alberta. Gas from this area is a relatively dry, sulphur-free commodity requiring no processing which can be marketed easily because of ready access to existing pipeline systems. Exploratory drilling in the foothills and deeper basins of western Alberta became more attractive as the prospect of better prices began to offset the deeper drilling costs of this area and the expense of removing sulphur.

The search for gas in shallow formations in southern Alberta continued in 1973 to be a priority exploration target and this was reflected in a 120% rise in the number of wells drilled. Additional exploratory interest in this area was generated when the British block near Medicine Hat, formerly reserved for military testing, was made available for exploration. This 8,000-sq-mile area is now being evaluated by a provincial government funded drilling program. The block is almost completely surrounded by gas-producing fields and is estimated to contain upward of 4 MMMMc of gas reserves. The first 27 tests of the scheduled 50-well drilling program have been drilled and all were reported successful.

In British Columbia exploration and development drilling in or near the established fields close to Fort St. John continued in 1972 at a rapid pace. Exploration gas wells completions increased 100% and development wells, 50%. A high level of activity continued in 1973.

In Saskatchewan exploration was more static in 1972. Any drilling activity that did take place was in the neighbourhood of the established fields in the southwestern corner of the province. Activity declined in 1973.

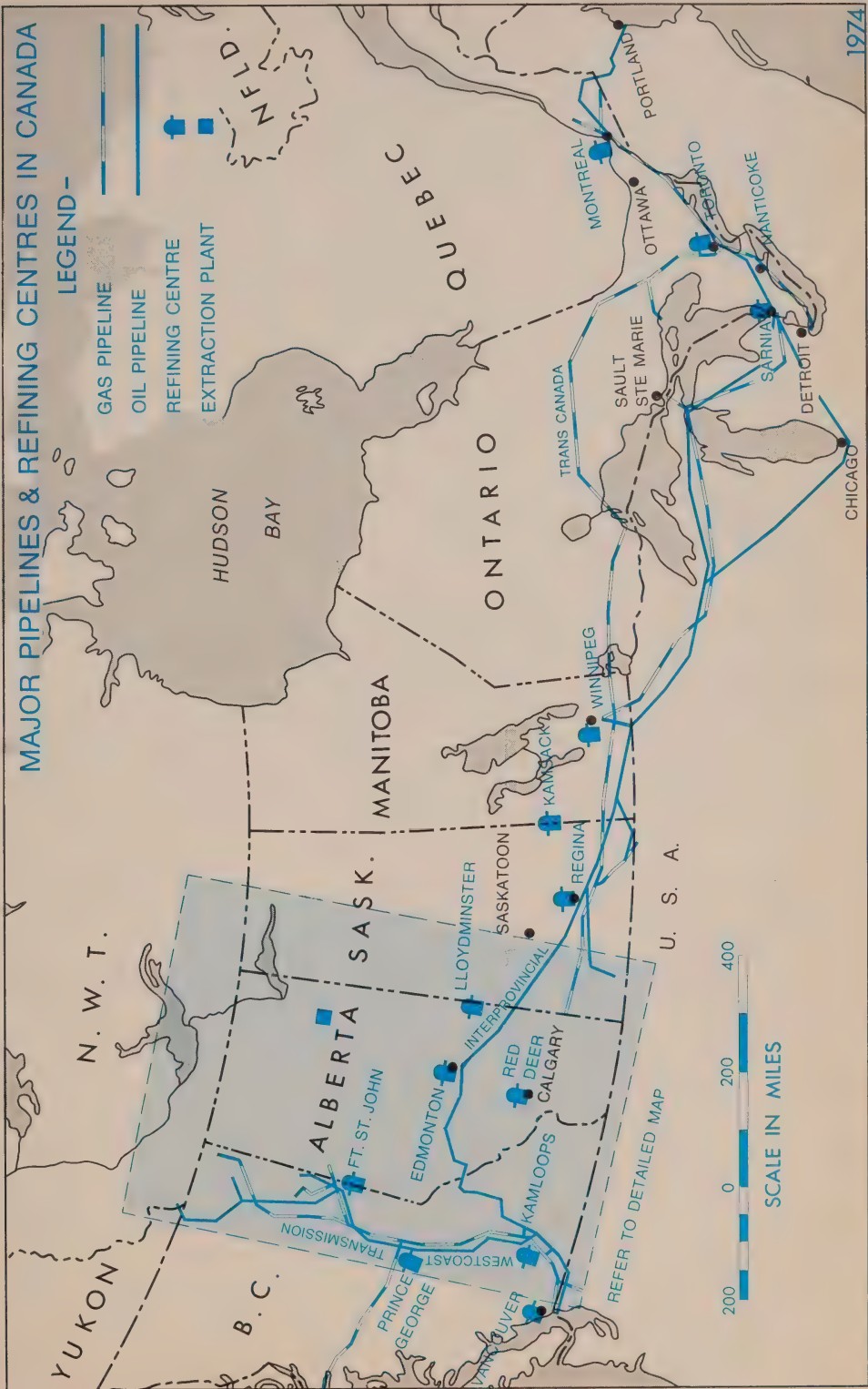
Northern regions. On the northern frontier, industry activity in the Mackenzie Delta and the Arctic islands continued unabated and significant discoveries were made in both areas. The discoveries in the Mackenzie Delta during 1973 confirmed the earlier estimates of a substantial reserve build-up. The initial gas discovery in the Mackenzie Delta area was made in 1971 on Richards Island; since then six more have been made, most of them also on Richards Island. Three were drilled in 1973 and in addition, the Kugpik 0-13 well drilled 55 miles north of Inuvik encountered significant quantities of both gas and oil from a zone below 7,200 ft. At the end of 1973 these discoveries had yet to be evaluated.

Late in 1973, the search extended to the Arctic off-shore area when Imperial Oil Limited began a multi-well drilling program 10 miles from Richards Island on a man-made island in the Beaufort Sea, the first off-shore well to be drilled in the Arctic. It is likely that progress of this well will be closely followed by both industry and government as the area off-shore from the Mackenzie Delta is reputed to have as good potential for hydrocarbon accumulation as the mainland. Imperial had applied for a licence to build a second island about 19 miles southwest of the first with the intention of drilling another off-shore well during the coming year.

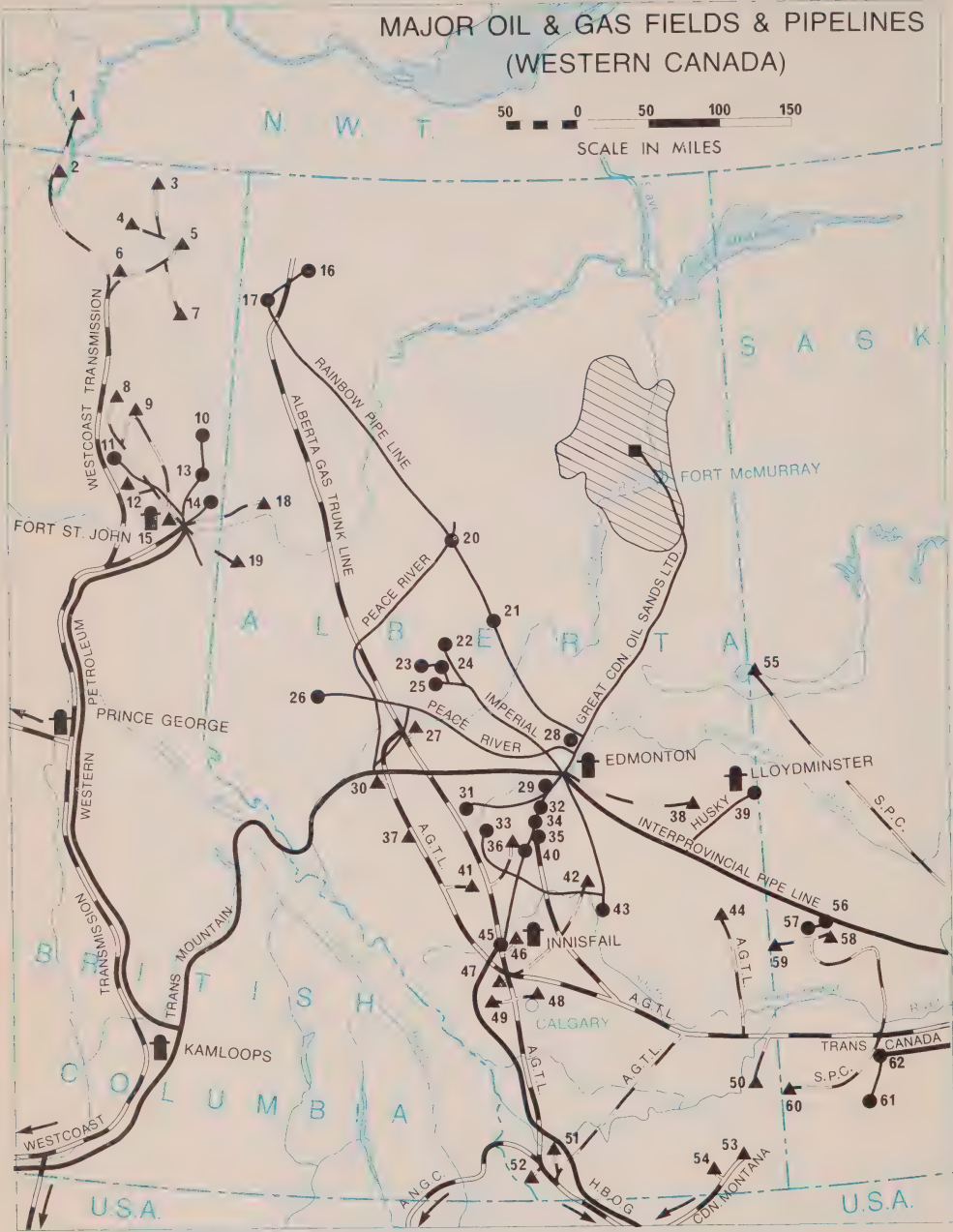
Since the discovery of a major gas field at Drake Point on Melville Island in 1970, five more major gas fields have been found, the most recent by Dome Petroleum on King Christian Island in 1973. All of the others were located by Panarctic Oils Ltd.

Atlantic region. In the off-shore east region, where drilling commenced in 1966, a total of 66 exploratory wells were completed at the end of 1973. There have been four significant discoveries, all in the vicinity of Sable Island, the first being made on the southwestern tip of the island in 1971. This well, when tested, yielded substantial quantities of oil and gas from 17 separate zones. Six miles to the southwest, a gas-condensate discovery was made a year later and the third significant discovery was made 30 miles east of Sable Island when the Primrose N-50 well tested flows of gas with condensate from three separate zones. In mid-1973 another oil discovery was made 25 miles southwest of Sable Island when the Cohasset D-42 well yielded low sulphur crude oil on test from three separate zones. All of these discoveries are currently being evaluated but it will probably be some time before it will be fully determined if they can be commercially developed.

Eastern provinces. In Ontario and Quebec no large gas discoveries were made in 1972. Ontario had seven minor gas discoveries and 27 development wells were drilled in the gas producing area of the province while in Quebec the seven exploratory wells drilled were unsuccessful.



1974



LEGEND -

GAS PIPELINE



GAS GATHERING LINE



OIL PIPELINE



OIL GATHERING LINE



GAS FIELD



OIL FIELD



REFINING CENTRE



EXTRACTION PLANT



OIL SANDS



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	20. Nipisi	43. Fenn-Big Valley
	21. Mitsue	44. Provost
British Columbia	22. Swan Hills	45. Innisfail
2. Beaver River	23. Virginia Hills	46. Harmattan-Elkton
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18. Worsley	41. Strachan	62. Fosterton

13.4.3 Production

Alberta provided over 80% of the marketable gas in Canada in 1972, as it has for at least the past decade. British Columbia continued to supply about 15%, a level reached in 1967. Production in both provinces has continued to expand since the inception of the interprovincial pipelines and toward the end of 1973 additional stimulus was provided by the increased pricing policies of the provincial governments. Production from the other natural gas producing provinces has remained static or declined.

In 1972, the Pointed Mountain field in the southwestern corner of the Northwest Territories came into production as a new Canadian source. This field now delivers approximately 2.5 MMcf a month into the Westcoast Transmission Company system for markets in British Columbia.

13.4.4 Transportation

The authorization of large-volume gas removal from British Columbia and Alberta beginning in the mid-1950s, led to the construction of the first major gas transmission lines in Canada. Today, the complete system serves the major Canadian centres of population from Vancouver to Montreal and transports gas to the international border for US markets in various areas from California to New England. The next expansion of the system will be directed to the opening up of Arctic gas resources. The initial economic, engineering and environmental studies for a Mackenzie Valley gas pipeline were completed in 1973 in preparation for filing before Canadian and US regulatory authorities in the spring of 1974. Research was also being carried out into the feasibility of transporting natural gas from the Arctic islands.

Most of the Canadian natural gas now being produced must be processed before it can be considered marketable. Only about 10% of the supply is marketed directly from the wellhead into a distribution or transmission line. Gathering lines take raw gas from the producing wells to a collection point on a transmission system or to the inlet of a gas processing plant. Transmission systems receive marketable gas from field gathering lines or plants and transport it through large-diameter pipelines to Canadian distribution companies or to interconnected US transmission pipelines at the international border. Distribution systems serve the ultimate customers in the centres of population. With the introduction in recent years of the PVC (polyvinylchloride) small-diameter pipe, distribution companies — especially in the western provinces — have been rapidly extending their service to rural customers by means of this easily laid durable pipe. At the end of 1972, a total of 67,300 miles of pipeline were in opera-

tion, of which 7,256 miles were gathering, 22,878 miles were transmission and 37,166 were distribution.

Unlike an oil pipeline company, which is a common carrier transporting oil for a fixed charge, a gas transmission pipeline company either owns the gas it transports or is a subsidiary of the company purchasing the gas at the source. The principal exception is the Alberta Gas Trunk Line Company Limited which delivers virtually all of the gas removed from Alberta to the main transmission companies at the provincial boundary.

The system of TransCanada PipeLines Limited commences at the Alberta border near Burstall, Sask. where it receives from Alberta Gas Trunk Line the gas it has purchased in Alberta. It follows an eastward route, receives gas from four Saskatchewan locations prior to passing south of Regina to a point south of Winnipeg where it branches into two lines. The original line goes eastward over a Canadian route to Thunder Bay, North Bay and south to Toronto. At Toronto this line divides with the westward branch serving the Hamilton area as well as delivering gas to the United States at the Niagara Falls border crossing; the eastward branch follows the Lake Ontario shore and the St. Lawrence River to Montreal before terminating at Philipsburg on the international border. A number of lateral lines extending from the main transmission line serve communities along this route. The second line from Winnipeg goes south to the border at Emerson where it connects with the Great Lakes Transmission Company system, a company jointly owned by TransCanada and an American company. This pipeline follows a route south of Lake Superior, crosses the Straits of Mackinac to the lower Michigan peninsula where it swings south then east to reconnect with the TransCanada system at Sarnia, Ont. The TransCanada system is Canada's longest pipeline, operating 5,367 miles of line in 1973 through which it delivered 1,010 MMMcf of gas. The US market took 26.9%, the balance being sold in Saskatchewan, Manitoba, Ontario and Quebec. Ontario accounted for the greatest volume of sales: 611 MMMcf or 60.5% of the total.

The Westcoast Transmission Company Limited's large-diameter transmission line extends from Fort Nelson in the northeastern corner of British Columbia to Sumas on the BC-US border, near Vancouver. The system includes a number of lateral lines gathering gas from producing areas in BC, western Alberta and, since 1972, the Pointed Mountain field in the Northwest Territories. In addition to serving Vancouver and communities along its route, Westcoast delivers gas to Pacific Northern Gas Ltd., a distribution company that serves communities and industries along a 500-mile route between the Westcoast mainline at Summit Lake and the Pacific Coast cities of Prince Rupert and Kitimat. It also supplies Inland Natural Gas Co. which operates an extensive distribution system serving communities in southern and central British Columbia. Westcoast's export sales are made to the El Paso Natural Gas Company for distribution in the Pacific Northwest region of the US. Westcoast operated 2,089 miles of pipeline with total sales in 1973 of 412 MMMcf. British Columbia took 145 MMMcf and the remaining 64.8% was sold to the US.

The Alberta Gas Trunk Line Company Limited transports most of Alberta's export gas from the producing fields to the provincial boundaries where it is delivered to the large interprovincial transmission pipelines. Its two main segments are the Foothills Division and the Plains Division. The former transports gas for the Alberta Natural Gas, Alberta and Southern, and Westcoast Transmission systems; the latter for TransCanada and Consolidated pipelines. In the northwest of the province a smaller system, the Northern Division, delivers gas to the main Westcoast Transmission trunk line. The system operated 4,113 miles of pipeline in 1973 with daily average receipts of 4.7 MMMcf.

Usually, natural gas pipeline systems operating in Canada confine their activities to either gathering in the field, transmission, or distributing to ultimate customers. However in the major producing provinces, several large systems combine elements of all three. In Alberta such integrated companies are Canadian Western Natural Gas Company Limited in the southern part of the province, and Northwestern Utilities Limited in central Alberta. These companies serve their customers from field to ultimate user with a combined total of more than 9,440 miles of pipeline. Saskatchewan Power Corporation delivers all gas sold in Saskatchewan through a 7,432-mile distribution and transmission system serving most of the populated areas of the province. Northern and Central Gas Corporation Limited operates probably the most widespread distribution system in Canada by serving industries and communities close to the TransCanada pipeline between Winnipeg and Montreal. Two large utility companies serve the industrialized areas of southern Ontario: the Consumers' Gas Company operating in the

Toronto area, the Niagara Peninsula and eastern Ontario, and Union Gas Limited serving southwestern Ontario.

13.4.5 Processing

Growth in natural gas processing capacity has kept pace with production increases from wet gas fields. Plant capacity increased substantially in 1972 as a result of the completion of several large plants and some major expansions of existing installations. Processing capacity at the end of 1972 was 15.4 MMMcf a day, an increase of 2.5 MMMcf over 1971. Capacity has doubled since 1967. Plant output includes pipeline gas, propane, butanes, pentanes plus and sulphur. More than 130 plants were in operation at the end of 1972, mostly in Alberta and British Columbia.

13.5 Oil and gas marketing

The marketing of petroleum and natural gas in Canada involves the transfer from points of production to points of consumption of both the crude and processed variants of these products. In the case of crude oil, it is purchased from the producers in western Canada and then shipped by the purchaser to the various refining centres for further processing into petroleum products. Natural gas is purchased in the West by the "trunk" pipeline companies and is then resold to the various natural gas distribution companies.

Refined petroleum products are distributed, for the most part, through the marketing outlets of the major refining companies. However, with the increasing availability of refined products in the late 1960s and early 1970s, the refineries found it profitable to dispose of an increasing portion of their output through independent outlets. In the case of gasoline, this meant an increase in the number of independent discount stations offering gasoline to the public at lower prices but with less service and fewer promotional extras. The major oil companies also entered into this mode of retailing by opening their own discount and self-service outlets under names different from those of their other stations. This shift in marketing emphasis was checked by the tighter supply situation of 1973 since the refineries were able to dispose of more of their output through traditional outlets.

Natural gas is marketed to final consumers through local or provincial natural gas utility companies who purchase their supplies from the major gas pipeline companies and then deliver it through their own pipeline systems to individual consumers. While these companies have concentrated their activities in the final distribution of gas, the increased price of gas at the wellhead and its decreasing availability relative to demand at various regulated prices have led them to increase investment in exploration and in production of natural gas in western Canada.

Canadian natural gas requirements are met almost entirely from domestic sources; in 1972, these requirements totalled 1,284 MMMcf. Imports were only 15.8 MMMcf, all from the US and these imports will terminate in 1976. The market for Canadian produced natural gas was almost equally divided between domestic demand and exports to the US. The United States has been increasingly deficient in domestic supply of natural gas and hence there is a growing market for Canadian gas in that country. However, sufficient reserves must be set aside to meet future Canadian requirements prior to export approval; as a result, no new export applications have been accepted since 1971 as it has been considered that available reserves are insufficient to meet any further export commitments.

In the case of oil, Canadian demand in 1972 was met almost equally from domestic sources (273.3 million bbl) and from import sources (288.8 million bbl). This division of the Canadian market between imported and domestic crude oil results from the National Oil Policy in force between 1961 and 1973 which stipulated that the Canadian market west of the arbitrarily drawn Ottawa Valley Line, essentially west of Quebec, was to be supplied by petroleum products produced from domestic crude oil, while the market east of the line could use imported oil from foreign sources. During the 1960s and the first three years of the 1970s Canadian crude oil prices were higher than those from foreign sources so that it was not economic to supply refineries in Montreal and the Maritimes from western Canada. The increase in international crude prices that began to occur in 1973 and the large increase in January 1974 changed this price relationship and plans were made to deliver western Canada crude to Montreal.

Canadian crude oil has been exported to the US mid-west and the State of Washington

since the early 1950s. There is a direct link between the Alberta and Saskatchewan fields and the Chicago and other Great Lakes markets via the pipeline system of the Interprovincial Pipe Line Company, and from Alberta and British Columbia fields via the Trans Mountain pipeline to refineries in the State of Washington. Western Canada producers exported 341 million bbl of crude and equivalent oil to these markets in 1972 and 413 million bbl in 1973.

Canadian crude oil exports exceeded crude oil imports for the first time in 1969. The favourable balance increased from 9.6 million bbl in that year to 88 million bbl in 1973. Petroleum product exports exceeded imports for the first time in 1972 with an excess of 21.3 million bbl when product exports increased to 73.7 million bbl and imports decreased to 54 million bbl. Product exports exceeded imports by 47 million bbl in 1973. The export increase has been due largely to the fact that demand for heavy fuel oil in the US northeast has grown more than refinery capacity in that region. This increasing export demand was primarily met by the two large new refineries at St-Romuald, Que. and Point Tupper, NS. The new refinery at Come By Chance, Nfld. built in 1972, was also designed with this market in view. These new refineries have also played an important part in filling the needs of the domestic market.

The level of crude oil exports has been kept under surveillance by the National Energy Board and controls were imposed on the export of petroleum products in June 1973.

Venezuela is the major source of Canadian crude oil imports with some 143 million bbl in 1972, a decrease from 148 million in 1971. Imports of crude oil from the Middle East increased to 100 million bbl in 1972 from 57 million in 1971. Other important sources of imported crude oil were Nigeria who supplied 21 million bbl and Colombia with 4 million bbl.

Average annual per capita consumption of natural gas in Canada is highest in Alberta (162.4 Mcf in 1972) and Saskatchewan (96.1 Mcf) where the major natural gas sources are close to markets. This is followed by Ontario with its large industrial market (70.6 Mcf). In the areas east of Ontario, the distance from the major sources of natural gas supply in the West coupled with the competitive oil price in the East has meant a limited market for natural gas in this region. The minor quantities of natural gas consumed in New Brunswick are produced from small local supplies. Average per capita consumption for Canada as a whole rose to 56.3 Mcf in 1972 from 49.8 Mcf in 1971.

More than half of the natural gas sold in Canada is now used for industrial purposes with the greatest part utilized in the large industrial centres of south-central Ontario. In 1960 residential users accounted for 33.8% of total sales, with commercial users taking 15.5% and industrial users 50.7%. In 1972 the proportions were 24.8%, 19.7% and 55.5%, respectively.

The regional consumption of petroleum products is indicated in Table 13.9 for the years 1963, 1971 and 1972. The relatively small percentage of light fuel oil used in the Prairie regions reflects the dominant role of natural gas whereas the amount of light fuel oil used in Quebec and the Atlantic Provinces is well above the national average as a percentage of total petroleum consumption. Gasoline accounts for over one third of total petroleum product consumption in Canada with the ratio in Ontario being the highest of any region.

There were a number of oil policy developments in 1973, related directly to the international oil situation, which had a marked impact on oil marketing in Canada and on the oil economy as a whole. In March the federal government established export controls on crude oil and in June on petroleum products in order to ensure adequacy of supply within Canada. On September 4 the Prime Minister announced a price restraint policy for Canadian crude oil and the price at the wellhead remained at the \$4-a-barrel level until April 1974. The price of imported oil also remained under surveillance so that only actual increases in purchase costs were passed on to consumers during 1973. Plans were made to extend the oil pipeline system to Montreal to make western Canada crude oil available in that refinery centre and thereby increase the country's self-reliance in oil supply.

A number of immediate emergency measures were taken in the latter part of the year as the Arab oil embargo continued. These measures included the movement of western Canada crude oil down the St. Lawrence Seaway to Montreal and, after the winter closing of the Seaway, tanker movements from Vancouver via the Panama Canal to eastern Canada. An oil export tax was levied, commencing in October, to ensure that Canadian crude oil sold in the United States was priced at the international competitive level and not at a discount and also to ensure that the windfall profit arising from the increases in international prices would not accrue to industry but would be collected for the benefit of all Canadians. When the very large price increase of January 1, 1974 occurred, the federal government took steps to establish an

import cost compensation program so that consumers in eastern Canada, dependent on imported oil, would not be subjected to this fuel cost increase.

For the longer term, steps were being taken to establish a one-price oil system in Canada to keep Canadian prices at less than international prices but also at such a level as to encourage the development of new oil and gas resources in the frontier regions. The year 1973 was one of great change in the marketing of oil in Canada and a time of major policy implementation to meet the new international circumstances of rapidly rising prices and threatened oil shortages.

13.6 Coal

Canadian production of coal in 1972 was 20.7 million short tons valued at \$150.6 million (Table 13.10). Production increased 12.4% in volume but 23.7% in value compared to the previous year. Regionally, production in 1972 increased in British Columbia and Alberta and decreased in Saskatchewan, New Brunswick and Nova Scotia. Extraction of coal in western Canada totalled 18.8 million short tons while the output of Nova Scotia and New Brunswick mines totalled 1.9 million tons. About 46% of Canadian production was exported in 1972. This was the second consecutive year that Canadian output exceeded the amount imported; coal imports from the US totalled 18.6 million tons.

Preliminary figures for 1973 give total coal production as 22.6 million short tons with all western provinces showing an increase but the Maritimes registering a decrease. Production of bituminous coal in western Canada totalled 12.0 million short tons of which 11.1 million were exported to Japan and 0.2 million to the US. Imports from the United States decreased markedly to 17.3 million short tons because of reduced thermal demand by Ontario Hydro.

Exports of coal in 1972 were 9.4 million tons of bituminous coal, with British Columbia and Alberta accounting for 61% and 38%, respectively. Japan received 9.3 million tons or 98.9% of the total exports. Spot shipments of coal to Europe, Chile and the United States made up the balance. Imports of coal increased 6.2% to 18.5 million tons. Imports were up because consumers were rebuilding stockpiles depleted by a six-week strike of coal miners in the US in 1971.

In 1972 approximately 7.3 million tons of coking coal was converted to coke. Imports from the United States provided roughly 90% of the coking coal used. Canadian steel companies imported approximately 55% from captive mines in the United States.

Canada's coal industry serves two principal types of markets: coal for the production of thermal power and coking coal for the steel industry. The use of coal for thermal power generation has a promising potential particularly in Alberta, Saskatchewan, Ontario and British Columbia. Virtually all of Canada's coking coal is exported and competes in the international market.

Coal used for thermal-electric power generation decreased 2.3% to 16.8 million tons in 1972. Domestic coal, mainly subbituminous coal in Alberta and lignite in Saskatchewan, supplied roughly 8.4 million tons; Ontario Hydro imported the remainder used in the thermal power industry. Based on the power utilities' plans, use of coal for power generation is expected to continue to grow, increasing to about 21 million tons in 1975.

Alberta is Canada's leading coal-producing province, producing both subbituminous and bituminous coals. Subbituminous coal is used primarily for generating electricity and most bituminous coal is exported to Japan. Bituminous production was 4.1 million tons and subbituminous production was 4.9 million tons, an increase of 14.8% and 10.8%, respectively, over the previous year.

Alberta continued to expand its subbituminous industry in 1972 to meet the demand for energy in the province. Thermal electric plants located at or near coal mines can be expected to become more important in view of the Alberta government's recommendations that coal should constitute a larger proportion of fuel for thermal generation of electricity. This is already being put into effect at two major sites: Wabamun Lake and the Forestburg area. At Wabamun Lake, 40 miles west of Edmonton, Calgary Power Ltd. operates two power plants using coal from two mines where the utility has contracted out the mining operations to Manalta Coal Ltd. Here, the Highvale mine, the newest mine in the province, is planning expansion from the current level of 1.2 million to 2.4 million tons by 1974. Further expansion is also taking place at two subbituminous mines in the Forestburg area in order to meet future requirements of the Battle River generating station operated by Alberta Power Ltd.

Four mines produce coking coal in Alberta. The largest operator, McIntyre Porcupine Mines, Limited, near Grande Cache, was able to supply only 75% of its contracted tonnages because of unsatisfactory operation of the coal preparation plant which currently recovers only about 65% of the coal feed. By the end of 1971 the company decided to replace the longwall equipment in McIntyre No. 2 and No. 5 mines with continuous miners and shuttle cars and the new system was operational by early 1972. In 1973 the company studied the possibility of developing a new surface mine to replace its No. 8 mine where the reserves will be depleted in two or three years. Even though raw coal production was higher in 1972 than in 1971, clean coal shipments were still below the contracted level by approximately 25%, a shortfall attributable to higher production of strip coal with problems at the preparation plant and to the seamen's and longshoremen's strikes which affected most coal exporters. In January 1973 the No. 5 underground mine was closed as uneconomic and the Japanese contract was modified to delivery of 1.25 million long tons a year for two years at an increased price. McIntyre then embarked on a program of expansion of coal production from surface mines and diversification of marketing.

During 1972, Cardinal River Coals Ltd. produced coking coal at its full-rated production capacity. The company managed to overcome the effect of the two shipping strikes and shipments to Japan were at contracted levels. In August 1973 an increase in contract price was negotiated and the annual amount for delivery to Japan was raised from 1.0 to 1.5 million long tons.

The Canmore Mines, Limited continued to export small quantities of coal during 1972. Coleman Collieries Limited had operational difficulties and negotiated an 18-month reduction of 500,000 tons in its contracted tonnages.

British Columbia. Coal was produced in two areas of British Columbia in 1972. Fording Coal Limited, BC's second and Canada's newest coking coal mine came on stream in April 1972. This new mine is located near Elkford about 40 miles north of Kaiser Resources Ltd.'s mine at Sparwood. Development of this mine followed the signing of an agreement in June 1969 with Japanese steel producers. As a result of general start-up problems with the mine and preparation plant, production in 1972 and 1973 remained below the original estimate but full production was expected to be attained in the fiscal year 1974-75. The design capability of Fording mine is 3 million long tons of clean coal annually; the coal is mined in two areas, one a shovel-truck operation and the other a drag-line operation.

Kaiser Resources Ltd. made steady progress in 1972 toward its planned production capability. However, production was hampered during the first quarter by severe winter weather conditions which disrupted rail movement of coal to the Roberts Bank port near Vancouver. The after-effects of fire that shut down the preparation plant in late December and early January was also a contributing factor. Shipments were severely curtailed by the seamen's strike in Japan which lasted from May 5 to mid-July; however, Kaiser was able to renegotiate its contract on more favourable terms. By September 1972, Kaiser had solved its technical difficulties to the degree that it established a monthly production record of 457,000 long tons of clean coal. The revised contract of 4.5 million long tons of metallurgical coal to Japan was fully met in 1973.

Generally, exploration for coking coal in British Columbia slackened in 1972 and 1973 compared with the previous two years, partly due to the fact that Japanese coal demand had lessened. By the end of 1972, approximately 1 million acres in coal licences continued to be held in the province by about 45 companies or consortiums; however, of this total, only a few companies had accomplished substantive development work and preliminary investigation of market possibilities.

Saskatchewan. Lignite production experienced the same accelerated growth as did the sub-bituminous industry in Alberta, with output destined primarily for power generation in Saskatchewan and Manitoba. Lignite production generally is on an upward trend but increased hydro-electric power generation limited the use of lignite for thermal power. Initial development work began in 1972 on a new lignite mine at Estevan by Manitoba and Saskatchewan Coal Company (Limited). The new mine will be the sole supplier of the nearby Boundary Dam power plant of Saskatchewan Power Corporation. Annual production capacity was scheduled to reach 1.8 million tons a year, raising provincial output to 5 million tons annually. Because of the growing demand for lignite the federal and provincial governments have undertaken to determine the potential of Saskatchewan's lignite reserves.

Nova Scotia. In early 1972 the Cape Breton Development Corporation (DEVCO) announced the closing of the No. 20 colliery at Glace Bay. This mine, which had operated for 32 years, had been idle since July 1971 pending an evaluation of its future. The study indicated that, even with large capital expenditures, the mine could not be operated economically. All equipment in the mine was salvaged and moved to DEVCO's three other mines in the area. During 1972 DEVCO began pre-production mining at its new Lingan mine near New Waterford, to partially offset the loss in production from the No. 20 colliery. The Lingan mine is scheduled to begin full production in 1974 at a rate of 1.5 to 2.0 million tons annually; initial operations will employ the room-and-pillar method using continuous miners and shuttle cars. In 1972, DEVCO initiated a research program to develop a way to reduce the sulphur content of Cape Breton coal. The program was undertaken by the federal Department of Energy, Mines and Resources and construction of a full-scale de-sulphurization plant was begun toward the end of 1973.

During 1972 the federal government approved the expenditure of \$40 million over a five-year period to rehabilitate three established coal mines on Cape Breton Island: No. 12 at New Waterford, No. 26 at Glace Bay and the Princess colliery at North Sydney. A new preparation plant will be built as part of this program.

In June 1972 Thorburn Mining Limited, formed by the Pictou County Research and Development Commission, permanently closed its McBean coal mine on the Nova Scotia mainland. This mine had been operated for many years on financial assistance from federal and provincial governments.

New Brunswick. In 1972 N.B. Coal Limited produced coal from seven surface locations within the Minto coalfield for thermal generation of electricity in the nearby plant operated by the New Brunswick Power Commission. Underground mining has been phased out and the 2-ft-thick seam is mined by drag-line to a maximum depth of about 80 ft. Easily-mined reserves are nearly depleted but a small production of about 400,000 tons has been maintained in recent years.

Marketing factors. Although metallurgical coal is the least expensive and most efficient source of energy readily available for the steel industry, Canadian thermal coal must compete with imported coal, oil, natural gas and nuclear power. Its competitive position depends not only on mining conditions and costs but most significantly on the distance between mine and market and the availability of low-cost transportation. Transportation costs are the major reason why western Canadian coals have not been used in any significant quantities in Ontario which depends heavily on supplies from the nearer coal fields of the eastern United States. As pressure increases in the US for energy self-sufficiency, supplies from US sources may no longer be as readily available to Canada; faced with rising oil and gas prices, it may become economically feasible to supply western Canadian coal to thermal power generation stations in central Canada. Technological advances such as the use of unit trains similar to those now being used to carry coking coal from Alberta to Roberts Bank, BC could help to offset the effects of higher transportation costs. Other methods being explored include the use of slurry pipelines.

Synthetic natural gas from coal is a developing industry of considerable importance over the long term although it still faces a number of hurdles before commercialization. Advancement of coal gasification technology is expected to lead to full-scale process availability by the end of this decade.

13.7 Electric power

13.7.1 Electric power development

While most of the fossil fuels (coal, oil and gas) are extensively employed in a direct form to provide energy, a significant portion is converted into a secondary form of energy, electricity. In the case of coal, more than half of Canada's energy in this form is converted to electricity. Two other primary energy resources, hydraulic energy and uranium, are almost exclusively employed after conversion to electricity. The reasons for employing this energy conversion, and for the sustained growth in electrical energy use in Canada since the beginning of the century, are principally the ease with which energy in the electrical form can be distributed, the flexibility of control and the efficiency of conversion to mechanical power, light, heat and

other end uses. From a modest 133 MW (megawatt = one thousand kilowatts) of generating capacity installed at the end of 1900, Canada's installed hydro capacity rose to 34,266 MW by the end of 1973 and thermal capacity to 20,005 MW (Table 13.11).

Thermal-electric power development in Canada was slow and of relatively minor importance until the late 1940s. The rate of development of hydro facilities, on the other hand, accelerated after the turn of the century when improvements in electric power transmission techniques were introduced and increasing emphasis was placed on the construction of large hydro-electric stations.

During the prosperous 1920s demand for electricity became heavier and the rate of installation increased appreciably. Then, in the depressed conditions of the early 1930s, power demand dropped off but this did not show up immediately as a drop in the installation rate because of the time lag inherent in hydro-electric power development. The completion of hydro projects initiated prior to the depression period accounted for the continuation of the high rate of capacity installations until 1935; thereafter, poor economic conditions in the 1935-39 period resulted in a reduced rate.

The tremendous demand for power for Canada's war industries accounted for the sharp rise in installation of new generating facilities between 1940 and 1943 but construction dropped off from 1944 to 1947. After the war, industrial expansion and rapidly growing residential and agricultural development placed extremely heavy demands on power generating facilities. Since hydro sources alone could not possibly satisfy this demand an extensive program of thermal plant construction began in the early 1950s until, by 1956, thermal generation represented 15% of installed capacity. Since then, the annual installed capacity has averaged 56% hydro-electric with the remainder in thermal generation. At the end of 1973 thermal generation accounted for 37% of Canada's installed capacity.

Thermal power generation may use fossil fuels or nuclear fuels as the source of energy. The fossil fuels — coal, gas or oil — can be obtained from domestic sources in some parts of Canada but nuclear fuel is becoming an increasingly important source of energy for thermal power generation. Nuclear power will be especially attractive for regions where fossil fuel costs are relatively high and where the power system permits the use of very large generating units which show the best economic advantage for nuclear plants. The CANDU reactor system, which provides the heat source for Canadian nuclear plants, allows the use of natural uranium mined and processed in Canada.

13.7.2 Hydro-electric power generation

Hydro-electric generation forms a significant though decreasing part in Canada's electrical development. By the end of 1973, the hydro portion of the country's total generating capacity had fallen to 63% from over 90%, 20 years earlier.

In view of the vast water resources existing throughout Canada, there would appear to be many undeveloped sites that could be potential sources of hydro-electric power. It is not sufficient, however, to assume that all of these possibilities represent economically viable sources of electric power. In fact, only a very minor portion of the sites with a theoretical power potential can actually be developed competitively. Before a site can be termed a source of potential power, a detailed analysis of such factors as cost, geography, geology and ecology must be performed. Until such a study is completed on a national scale, estimates of Canada's undeveloped water power resources (recently estimated to be in excess of 60,000 MW), may be misleading.

Figures of water power resources already developed are given in Table 13.11 and are based on the manufacturer's rating in kilowatts as shown on the generator name-plate, or derived from the electrical rating. The maximum economic installation at a power site can be determined only by careful consideration of all the conditions and circumstances pertinent to its individual development. It is normal practice to install units having a combined capacity in excess of the available continuous power at Q50 (flow available 50% of the time), and frequently in excess of the power available at Qm (arithmetical mean flow). There are a number of reasons for this. The excess capacity may be installed for use at peak-load periods, to take advantage of periods of high flow, or to facilitate plant or system maintenance. In some instances, storage dams have been built subsequent to initial development to smooth out fluctuations in river flows. In other cases, deficiencies in power output during periods of low flow have been offset by auxiliary power supplied from thermal plants, or by interconnection with

other plants which operate under different load conditions or are located on rivers with different flow characteristics.

The extent to which the installed capacity exceeds the available continuous power at the various rates of flow is dependent upon the factors that govern the system of plant operation, and varies widely in different areas of the country.

The distribution of installed hydro-electric generating capacity given in Table 13.11 reveals that substantial amounts of water power have been developed in all provinces and territories except Prince Edward Island. As natural-resource development proceeds, the fortunate incidence of water power in proximity to mineral, forest and other resources becomes increasingly apparent. The existence of large amounts of potential hydro power on northern rivers may well prove to be a factor of prime importance in the eventual realization of the natural wealth of the Canadian North.

The water power resources of Nova Scotia and New Brunswick, although small in comparison with those of other provinces, are a valuable source of energy and make a substantial contribution to the economies of the two provinces. Numerous rivers in both provinces provide moderate-sized power sites either within economic transmission distance of the principal cities and towns or advantageously situated for use in development of the timber and mineral resources. These provinces have, however, turned to thermal generation initially coal fired but now increasingly utilizing oil; also, plans are well advanced for development of nuclear generation in New Brunswick.

13.7.3 Thermal power generation

The incidence of immense water power resources in Canada and the brisk pace of their development has tended to overshadow the very considerable contribution being made by thermal energy in the nation's power economy. The fact that energy produced in thermal plants during the year accounted for only 37% of the total may be attributed in part to the fact that a considerable amount of the capacity installed is operated for peak-load duty, with hydro-electric capacity providing base-load generation. This pattern will change with the introduction of additional nuclear-fuelled thermal generation plants which can be operated economically at high capacity for base-load purposes.

Conventional thermal power. Over 90% of all thermal power generating equipment in Canada is driven by steam turbines. The magnitude of loads carried by steam plants combined with the economies of scale has led to the installation of steam units with capacities as high as 540 MW, and units in the 800-MW size range have been committed for as early as 1975. Additions of these larger units are, however, only possible where systems are large enough to accommodate them. Additional types of thermal generation are provided by gas turbine and internal combustion equipment. The flexibility of internal combustion engines makes this type of equipment particularly suitable for meeting power loads in smaller centres, especially in the more isolated areas. Gas turbines are frequently used for peak loads where their rapid start-up ability is an advantage.

Table 13.11 shows that thermal generation is predominant in Prince Edward Island and Nova Scotia. By the end of 1971, the Yukon Territory had joined the Northwest Territories, Alberta, Saskatchewan, Ontario and New Brunswick in having greater than one half of their total capacity thermal-electric. It is expected that thermal generation will become increasingly predominant in Ontario. Although coal is still the most important fossil fuel for thermal plants in Nova Scotia, oil is rapidly becoming the preferred choice for thermal power generation in all of the Atlantic Provinces.

Nuclear thermal power. Commercial electric power generated from the heat of nuclear reaction became a reality in Canada in 1962 when the 20 MW Nuclear Power Demonstration (NPD) station at Rolphton, Ont., fed power for the first time into a distribution system in Ontario. The NPD station was a forerunner of a series of large nuclear stations that will shoulder more and more of Canada's rapidly growing power loads.

Atomic Energy of Canada Limited, a federal Crown company incorporated in 1952, has concentrated its efforts on the development of the CANDU reactor which uses natural uranium as a fuel and heavy water as the moderator. By using heavy water as the moderator, a high energy yield can be obtained from natural uranium and, since natural uranium is a low-cost nuclear fuel, the cost of fuel is a minor component in the cost of producing power. Natural

uranium has the added attraction of being available in commercial quantities in Canada.

At Douglas Point on the shore of Lake Huron, the country's first full-scale nuclear power station went into operation in 1966. The station, built with the co-operation of Ontario Hydro, houses a 208 MW CANDU reactor. Experience gained in the design and operation of the NPD and Douglas Point reactors encouraged and contributed to the development of larger units. Construction of the 2,160-MW Pickering nuclear station near Toronto is now complete; two of the station's four units came on line in 1971 and units 3 and 4 produced their first electricity, ahead of schedule, in 1972 and 1973. All four units have performed exceptionally well with capacity factors in 1973 ranging from 70% to 93%, for an average of 83.4%. Over 18% of Ontario Hydro's total primary energy requirements in 1973 were provided by the Pickering nuclear station. Work on the Bruce nuclear station for Ontario Hydro is proceeding on schedule with four 750-MW units planned for installation from 1975 to 1978. In addition, a duplicate of the Pickering station, at the same site, has been committed and Hydro-Québec has started construction of a 600-MW CANDU station at Gentilly.

A further step in the development of the CANDU reactor is the use of boiling light water instead of pressurized heavy water as the coolant. The Gentilly nuclear power station near Trois-Rivières utilizes boiling light water in its CANDU reactor. This station came into service in 1971 with 250 MW of nuclear-electric capacity.

13.7.4 Generating capability and load requirements

Power generating capability is the measurement of the available generating resources of all hydro and thermal facilities at the time of the one-hour firm peak load for each reporting company and is not equal to the capacity of such generating facilities. For example, a hydro plant may have a capacity of 100 MW but, if at the time of peak load the water available for generation is only 80% of the plant capacity requirements, then its capability is 80 MW.

Total generating capability has grown at a rapid rate especially in the past few decades. The annual rate of increase was 7.1% in the period 1962-72 and 8.3% in the period 1968-72. In comparison, the forecast rate of growth for the years 1973-77 is 7.6%; thermal generating capability is expected to grow at an average rate of 12.5% a year in the forecast period compared with 11.8% in the period 1962-72, and hydro-electric capability is expected to increase at 4.8% a year compared with 5.4% in the 1962-72 period. This rate of growth in hydro generating capability in the forecast period is attributable to the large power projects under construction in relatively remote areas that will be completed within the next few years.

Among the provinces, Ontario has the largest generating capability, followed by Quebec, British Columbia and Newfoundland. Quebec has the largest hydro-electric generating capability, followed by Ontario and British Columbia, but Ontario has the largest thermal capability, followed by Alberta and British Columbia. The first full-scale nuclear power station went into commercial operation in Ontario in early 1967.

The largest absolute growth in generating capability for the forecast years 1973-77 is indicated for Ontario at 8,794 MW, followed by Newfoundland at 3,170 MW, British Columbia at 2,776 MW and Quebec at 1,737 MW. Ontario will meet most of its increased generating capability by adding 6,473 MW in fossil-fuelled capability and 2,023 MW nuclear. Newfoundland will add 2,966 MW hydro and 204 MW thermal, and British Columbia 2,477 MW hydro and 299 MW thermal.

Firm power peak load is the measure of the maximum average net kilowatt demand of one-hour duration from all loads, including commercial, residential, farm and industrial consumers as well as the line losses. Such load demand increased at the rate of 7.4% a year from 1962 to 1972 and 6.5% a year from 1968 to 1972; peak load demand is forecast to increase at the average rate of 6.9% a year in the period 1973-77. As a result of the rapid increase in generating capability and the somewhat slower but steady increase in the peak loads, together with the slight reduction in deliveries of firm power to the United States, the indicated reserve on net capability in the 1961-71 period increased each year except 1961, 1963, 1964, 1966 and 1972. Increases are forecast for each year from 1973 to 1977, with the exception of 1974. The reserve ratio as a percentage of firm power peak load reached a high of 28.2% in 1960 and fell to 13.7% in 1968 but is expected to increase to 25.1% in 1977. Absolute figures are given in Table 13.12.

13.7.5 Utilization of electric energy

In 1972 Canada's generating facilities produced 240,213 GWh (gigawatt-hours = millions of kilowatt-hours) of electric energy, after allowing for the energy used in the power stations themselves. Of this total, 74.9% was produced in hydro-electric stations and the remainder in thermal stations. Electric power exported to the United States exceeded imports by 8,656 GWh during 1972, so that the total energy available in Canada amounted to 231,557 GWh.

As indicated in Table 13.13, total electric energy consumed in Canada during 1972, after deducting about 9% for losses, was divided among commercial users (15%), domestic and farm consumption (22%) and industrial loads (54%). The energy distribution for this latter group can be subdivided approximately as follows: one third to the mineral industry (including smelting and refining), one quarter to the pulp and paper industry, one tenth to chemical manufacturing and the remaining portion to all other industrial categories. The availability of electric energy, at reasonable cost, is an important element in Canada's industrial growth.

For a few industries the cost of electric power is a key element in economic competitiveness. For most industries, however, electric energy is but one of the many cost elements which influence the opportunities for expansion. The assurance of a reliable supply of electric energy, the availability of assured supplies to meet the needs of growing demand without delay, and attention to the many other factors influencing industrial development will normally be a more effective element in industrial growth than one which assumes that "low cost power" is an essential or sole ingredient for success.

Over the past two decades, the portion of the country's total electric energy consumed by industry has dropped appreciably (from 67% in 1950 to 54% in 1972) while consumption by other sectors has risen significantly. This is not to say that there has been an actual decline in industrial demand but rather that industrial expansion has been less energy-intensive and there has been a more rapid growth by the other users. Domestic and farm consumption has shown the highest increase, from 13% of the total in 1950 to 22% in 1972. Commercial consumption has also risen noticeably, from only 11% in 1950 to 15% in 1972. The growth among non-industrial customers results from a greater reliance by Canada's population on facilities powered by electricity. Tremendous quantities of electric energy are required, for example, to meet rapidly escalating demands for heating, cooling, lighting, transportation, elevators, electrical appliances and farm machinery. The shift of population from rural areas to cities and towns, where electrical demand is greatest, has also been a contributing factor to this growth.

Details of the provincial pattern of electric energy use can be seen in Table 13.14. Of total energy made available in Canada during 1972 more than two thirds was consumed in Ontario and Quebec with the remaining one third shared by all other regions. The share of total consumption by these other regions has, however, been rising (combined total of 26% in 1960 compared to 33% in 1972) while it has been declining in Quebec (40% in 1960 as against 33% in 1972) and has remained constant in Ontario at 34%. In all parts of Canada industrial users have been and still are the prime consumers. The actual portion of total energy consumed by industry in 1972, for instance, ranged from a high of 62% in British Columbia, which includes the energy used in both the Yukon Territory and Northwest Territories, to a low of 47% in the Prairie region. Domestic and farm consumption remains greatest in the Prairie Provinces and Ontario but for somewhat different reasons. In Ontario, where the majority of people are urban dwellers, it is the high demand from the large cities that accounts for the higher level, while in the Prairies it results from a substantial farming load combined with a normal level of domestic usage.

Part of Canada's growing need for electric power reflects a growth in population but in addition the consumption per capita increased in 1972 by 8.2% to 10,600 kWh per capita. Since 1960 consumption per capita in Canada has risen by more than 73.8%. The Atlantic Provinces experienced the largest increase, 185% to 7,400 kWh per capita, followed closely by the Prairie Provinces with 161% to 8,100 kWh. The lowest over the period was in Quebec with only a 47% increase to 12,600 kWh per capita but the level was already very high. British Columbia recorded the highest per capita consumption in 1972, 14,000 kWh. Table 13.15 sets out details of this per capita consumption by region.

Electric energy generated in Canada during 1972 was equivalent to 54.9% of the amount which in theory could be generated if the total installed capacity at the end of the year were

operating continuously. The balance reflects fluctuations in load below peak demand during daily and seasonal cycles together with reserves of generating capacity.

13.7.6 Electric power transmission

The nature of the loads handled by small, widely scattered generating systems in the early days of the electric power industry in Canada did not warrant the expense of interconnecting power systems. However, as the demand for dependable electric power increased and improved techniques reduced power transmission costs, the benefits of integrating power systems to achieve reliability of service and flexibility of operation were re-appraised. Today, most of Canada's generating stations are components of large, integrated, and often interconnected, power systems operated by power utilities in the various provinces.

Research in the field of power transmission has developed techniques that enable power producers to utilize hydro-electric sites previously considered beyond economic transmission distances. Most noticeable, perhaps, is the progressive stepping-up of transmission-line voltages. In Canada, there are a number of transmission lines designed for operation at 500 kilovolts (kV) and 735 kV. A 574-mile, 500-kV line is in service to carry power from the Peace River to the lower mainland of British Columbia. In Ontario, a 435-mile, 500-kV line carries power from hydro-electric plants in the James Bay watershed to Toronto. In 1965 Hydro-Québec achieved world leadership when power was carried for the first time at 735 kV over the 375-mile transmission line between Quebec's Manicouagan—Outardes hydro complex and the cities of Quebec and Montreal. By the end of 1971, the initial program for 1,228 miles of the 735-kV line had been completed. Work has now been completed on the three additional 735-kV circuits to connect the Churchill Falls complex with the Hydro-Québec grid.

Most power is transmitted as alternating current but three applications of high-voltage direct-current (HVDC) are found in Canada. In service in British Columbia is a 260-kV HVDC link from the mainland to Vancouver Island. It has a capacity of 312 MW and includes 21 miles of undersea cable; it is a monopolar system using the ground as the return path for current. This system is being expanded to 624 MW for an in-service date of 1976. A second HVDC system was placed in service in 1973 linking the Kettle generation station on the Nelson River to Winnipeg where two 555-mile lines have been completed and converter equipment with an initial capacity of 810 MW has been installed. The planned ultimate rating of this system is 3,200 MW. Another application designed to provide a non-synchronous tie between the power systems of New Brunswick and Quebec is a 320 MW back-to-back HVDC system located at Eel River, NB. This facility was placed in service in 1972 employing solid state thyristor valves in place of the mercury arc valves used for the earlier HVDC systems.

Interconnections of 66 and 138 kV exist between British Columbia and Alberta and a 230-kV tie is being planned. Saskatchewan, Manitoba, Ontario and portions of the Quebec system are interconnected and, through the Ontario Hydro system, are linked with the north-eastern United States systems. Quebec, New Brunswick and Nova Scotia systems are interconnected. The first major international tie connecting regions of the Maritimes in Canada with the United States became a reality during 1970 on completion of a 345-kV link between the New Brunswick and Maine systems. British Columbia has an international tie with the Pacific Northwest (500 kV) and a 230-kV link between Manitoba and the United States was completed in 1970.

The search for economies in transmission systems has led to changes not only in materials used but also in tower erection and cable-stringing methods. Guyed V-shaped and Y-shaped transmission towers are being used increasingly in place of self-supporting towers where the terrain is suitable, and erection costs are being reduced by the use of helicopters to transport tower sections to the site for assembly. The use of helicopters for spraying for brush control on the right-of-way and for line inspection and maintenance is widespread.

13.7.7 Electric utilities

Federal government regulation of electric utilities with respect to the export of electric power and the construction of lines over which such power is exported falls within the jurisdiction of the National Energy Board.

Power is generated in Canada by publicly and privately operated utilities and by industrial establishments. Over 73% of the total electric power generated in 1972 was produced by publicly operated utilities, 12% by privately operated utilities and 14% by industrial establish-

ments. However, ownership varies greatly in different areas of the country. Although Quebec power installations were at one time privately owned, almost all were transferred to public ownership in 1963. In Ontario almost all electric power has been produced by a publicly owned utility for over 60 years.

Because the determination of market prices and regulation of services is limited to inter-fuel competition with oil, gas and coal, some regulation of electric utilities has been attempted in all provinces. In all but two provinces the generation and main transmission of power is the responsibility of a provincial Crown corporation. Investor-owned electric utilities are predominant in Alberta and Prince Edward Island, and play a significant role in Newfoundland, Ontario and British Columbia; they contributed about 12.3% of the total power generated in Canada in 1972. Generating facilities in industrial establishments represented 10.8% of installed capacity at the end of 1972 and generated 14.1% of the total electric energy produced in Canada in that year; however, on a percentage basis, there is a continuing decline in industrial generation as it becomes increasingly attractive to purchase power from utilities which can take advantage of larger unit sizes and operational flexibility. Even when process steam is required for an industrial operation, there are instances when it is advantageous to purchase both steam and power from the electric utility.

13.7.8 Developments in 1973

A record in the amount of new electrical generating capacity installed within a single year was established in 1973 when a net total of 4,323 MW was brought into service, increasing Canada's total installed capacity by almost 8.7% to 54,271 MW. At the end of 1973, total installed generating capacity consisted of 17,339 MW of conventional thermal, 2,666 MW of nuclear thermal and 34,266 MW of hydro, representing 32.0%, 4.9% and 63.1%, respectively (see Table 13.11).

Thermal generation (including nuclear) totalling 2,574 MW made up 60% of the new capacity; hydro-electric installations totalling 1,766 MW accounted for the remaining 40%. The fourth 540-MW nuclear unit in the Pickering, Ont. station raised Canada's nuclear generating capability by 25% to 2,666 MW.

As in recent years, the substantial increase in hydro capacity was contributed chiefly by the Churchill Falls development in Labrador which provided 84% of the hydro capacity added in 1973; the remainder was installed in Manitoba and Quebec. Most provinces, as well as the northern territories, added thermal capacity; major additions were 1,547 MW in Ontario and 617 MW in Alberta, representing 60% and 24%, respectively, of the total thermal additions.

Electric energy generated in Canada during 1973 increased by 10.4% to 262,273 GWh. Although, in absolute terms, the hydro generation growth of 14,976 GWh exceeded the 9,755 GWh increase in thermal generation, the percentage increase over previous years was lower for hydro at 8.4% compared with 16.4% for thermal. The respective totals for generation were 192,868 GWh (hydro) and 69,271 GWh (thermal). Consequently, the portion of Canada's total electric energy production provided by hydro facilities declined to 74.0%, with conventional and nuclear thermal contributing 21% and 5%, respectively.

Exports of electric energy to the US increased appreciably to 16,886 GWh. With 2,162 GWh of energy imported from the US, net export was 14,724 GWh representing 5.6% of total energy generation and an increase of 86% over 1972. Primary and secondary energy supplied for consumption within Canada increased by 7.8% to 247,415 GWh.

Escalation in the cost of oil fuel in 1973 and security of supply became matters of serious concern to utilities in the Maritime Provinces where a significant portion of electrical generation depends upon imported oil — 50% in New Brunswick and Nova Scotia and 100% in Prince Edward Island. This is giving rise to review of long-range generation and transmission programs in the Maritime Provinces with emphasis on alternative sources of generation.

Newfoundland. The water power resources of this province are very substantial. On the island, although the rivers are generally not long, topography and run-off favour hydro-electric power development.

The Newfoundland and Labrador Power Commission was established in 1954 to supply power wherever needed throughout the province. The Commission began large-scale production of electric energy in 1967 when the Baie d'Espoir plant began operating and the provincial transmission grid was established. Power is supplied from this grid to several industries direct

and to investor-owned electric distribution companies for distribution. The Newfoundland Light and Power Company is the principal distributor. Bowater Power Company Limited supplies the Bowater Newfoundland Pulp and Paper Mills Limited and several large mining operations. Electricity is provided to isolated areas by the Newfoundland and Labrador Power Commission through a Rural Electricity Authority and through Power Distribution Districts, principally by means of diesel generator sets.

Construction of the 5,225-MW Churchill Falls hydro development in Labrador continued to dominate the scene in this province. With three 475-MW units (units 5, 6 and 7) coming on line in 1973, the plant's capacity reached 3,325 MW in seven units, a full year ahead of original schedule. The 1,900 MW in operation in 1972 established the plant as the largest hydro plant in Canada and the latest additions have made it the largest individual hydro station in North America. Three additional 475-MW units in 1974 and a fourth in 1975 will add still another 1,900 MW for a total of 5,225 MW in 11 units. Virtually all of the Churchill Falls energy is sold to Hydro-Québec and is delivered to the Hydro-Québec system via 735-kV transmission. To match the rapid plant construction program, erection and stringing of the third 735-kV line from the Churchill Falls hydro station to the Labrador/Quebec border was completed in 1973; construction of this third line posed special problems to avoid the dangers of induced voltage from the two adjacent in-service transmission lines. Because of the advanced schedule at Churchill Falls some water flow was diverted from the smaller Twin Falls plant to the main Churchill Falls development reservoir for more efficient use at the higher head Churchill Falls plant.

Downstream of Churchill Falls, Brinco has undertaken feasibility studies on a projected 1,800-MW development at the Gull Island site. Additional sites could be developed on the Lower Churchill and adjacent rivers to substantially increase the available capacity. The provincial government commissioned a study, to be completed in 1974, on the feasibility of transmitting energy across the Strait of Belle Isle from Labrador to the island of Newfoundland. The Government of Newfoundland has indicated that energy from future development of the Churchill River in Labrador should be used in Newfoundland rather than exported. The island is expected to require additional power by 1977-78 to meet load growth, and the alternative to transmitting power from the Lower Churchill River would be additional "on-island" thermal generation and some further, though limited, development of hydro power.

Substantial expansion in "on-island" generating facilities in recent years was sufficient to meet the needs at present and for several more years. Although no new expansion was under way on the island in 1973, construction continued on a second 230-kV connection between the Baie d'Espoir hydro development and the west coast of the island. Some 85 miles of 230-kV transmission line was completed in 1973 from a new switching station at Buchans to the Bottom Brook terminal.

Prince Edward Island. The absence of any large streams in the province has led to an almost total dependence on oil-fuelled thermal-power generation except for a few minor hydro plants used to operate small mills. The Maritime Electric Company, Limited provides direct service to customers in Charlottetown and in the towns, villages and rural areas of the province with the exception of Summerside, where a municipal electric department serves customers with power purchased from the Company while the town's 6.9-MW diesel plant is on stand-by.

In 1973 the Maritime Electric Company, Limited installed a 25-MW gas turbine at Borden, raising that station's total capacity to 39 MW. A short 69-kV line was constructed to interconnect the Borden plant with the existing 69-kV system at Albany. Demand on the Maritime Electric system was 11.8% over the previous year but that rate of increase is not expected to be repeated in 1974 because of sharp increases in energy rates resulting from increased fuel costs.

Interconnection with the mainland by means of a 138-kV submarine cable across Northumberland Strait is being planned for service in 1976. With this facility the Island will have access to the much larger power systems on the mainland, including nuclear generation, and will thereby be relieved of its dependency upon small capacity thermal generation and imported oil supply for power production.

Nova Scotia. In 1973 the operations of the Nova Scotia Light and Power Company Limited and the Nova Scotia Power Commission were integrated into a single utility, the Nova Scotia

Power Corporation, following provincial government purchase in 1972 of all outstanding shares of the investor-owned utility.

The 100-MW oil-fired unit at Tufts Cove was recommissioned in 1973. This unit was placed in service in December 1972 but turbine problems caused a temporary shutdown pending blade replacement. A further 150-MW extension is planned for 1976 to increase the total plant capacity to 350 MW. Completion of a second unit at Point Tupper, rated at 150 MW, represented the province's largest new source of energy in 1973. A high-pressure steam interconnection enables these two units to supply process steam to the adjacent Canadian General Electric heavy water plant.

A second 138-kV transmission line through Cape Breton was completed during 1973 and construction was started on a 138/230-kV line from Sackville to Liverpool. Expansion of the Sydney steel plant, which will require significant new quantities of energy, has given rise to consideration of a third 138/230-kV line through Cape Breton from the Strait area to Sydney. Reinforcement of the existing interconnection of the power systems of New Brunswick and Nova Scotia is under study with consideration being given to using 345-kV transmission for this purpose.

New Brunswick. The New Brunswick Electric Power Commission was incorporated under the Electric Power Act of 1920. It has maintained a steady growth pattern since 1969. Power generation has risen from 4,196 GWh in 1970 to 4,748 GWh in 1971 and 5,894 GWh in 1972.

Power supply to meet present local demands is partly secured by a purchase agreement with Hydro-Québec covering the period 1971-76 and involving more than 11,000 GWh of surplus energy available from the Churchill Falls development in Labrador.

Although no new electric generating capacity was brought on line in 1973, construction of a major oil-fired thermal plant is now well advanced at Coleson Cove near Lorneville. This plant will provide 315 MW of new capacity in 1975 and a further 630 MW in 1976, in three relatively large economical generating units. Under an agreement with a consortium of New England utilities, they will receive 400 MW of capacity and energy for a period of 10 years beginning in 1976; in 1986 this 400 MW will revert to New Brunswick. A new 345-kV transmission system is being developed. The first 345-kV line between Coleson Cove and Keswick (near Fredericton) will have a capacity of 500 MW; two such circuits will connect Moncton and, if required, similar circuits will be built between New Brunswick and interconnecting systems.

At the Mactaquac hydro plant on the Saint John River, provision had been made in the initial planning for two additional units (units 5 and 6) to produce energy during high spring flows and for peaking service. Installation of unit No. 5 (110 MW) has begun and should be completed in 1975. Scheduling of the sixth unit awaits further growth of peaking capacity requirements in the province or on neighbouring systems.

The New Brunswick Electric Power Commission has initiated planning for development of its first nuclear power plant which will be designed as a two-unit 1,200-MW station. The Commission has undertaken a study to determine the amount of coal that can be economically mined in New Brunswick. If adequate coal supplies are located, it is possible that the 100-MW oil-fired station at Dalhousie (which was designed but not equipped for coal-firing) will be converted to coal.

Quebec. The richest of all provinces in water power resources, Quebec possesses about 40% of the total for Canada and leads in developed water power with installations of 13,764 MW in 1972, representing about 42% of the national total. Power production in the province is facilitated by the regulation of stream flow through storage dams owned and operated by the Department of Natural Resources. Some responsibility for regulation rests with the Quebec Hydro-Electric Commission. Details as to streams controlled appear in the *1973 Canada Year Book* p 580.

The abundance of Quebec's water power wealth, much of it in reasonable proximity to existing demand areas, has limited the application of thermal power to specific local use. With new developments in transmission technology allowing economic long-distance transportation of large blocks of power, it seems likely that Quebec will continue to concentrate on hydro-electric power and to develop some of its more remote rivers. Nevertheless, the province is beginning to look toward thermal power since it will serve not only to help guarantee an adequate power supply in the face of increasingly heavy demands but also to render the almost ex-

clusively hydro-electric base more flexible through integrated operation. Quebec's largest conventional thermal plant, the Tracy station near Sorel, has an installed capacity of 600 MW.

Commissioning of seven 475-MW units at the Churchill Falls plant in Labrador, with virtually the entire capacity (ultimately 5,225 MW) under long-term purchase contract with Hydro-Québec, has provided the province with most of its additional power needs over the short term. Accordingly, the province has been able to plan generation expansion on a longer-term basis than would otherwise be the case; consequently, in-province completions in 1973 were limited to a net gain of 35.1 MW in hydro capacity and a small thermal increase of 5.8 MW.

Over the short term, completion of Churchill Falls will provide Quebec with an additional 1,900 MW of hydro-electric capacity, 1,425 MW to come on line in 1974 and the remaining 475 MW in 1975. Construction of the Manicouagan—Outardes hydro complex will be completed by 1978 at which time an additional 1,640 MW will have been developed at two sites — Manic 3 and Outardes 2. In thermal power, Hydro-Québec has scheduled a 90-MW gas turbine plant for 1977 at Figuary in the Abitibi region and a 12-MW addition at Cap-aux-Meules for 1974. The largest thermal addition currently committed is a 637-MW nuclear unit for service in 1978 at the Gentilly plant. To be known as Gentilly II, this unit will augment the 250-MW nuclear unit (Gentilly I) commissioned in 1971.

In the James Bay region work has already started on the first phase of development, known as the La Grande complex. Plans through 1985 envisage the construction of dams, powerhouses, spillways, control structures and 80 miles of dykes, with associated reservoirs to store and divert water from the Caniapiscau, Grande Baleine and Opinaca rivers to the La Grande River. The four proposed powerhouses will span a 300-mile reach of the La Grande River and develop the entire 1,245 ft of head upstream of its mouth. Subject to final design approval the four stations, designated LG-1 through LG-4, have been planned to have a combined generating capacity of 10,776 MW, almost half of which (5,328 MW) will be developed at LG-2 in 16 units of 333 MW each. The other three plants are expected to produce 1,185 MW, 1,860 MW and 2,403 MW. To augment this phase of development, studies are being conducted to assess the economic feasibility of a Phase 2 program to harness the Rupert, Broadback, Nottaway and Eastmain rivers, located south of the La Grande River basin.

Ontario. Most of the electric power produced in the province comes from generators of The Hydro-Electric Power Commission of Ontario. The province's largest hydro-electric generating station is located on the Niagara River at Queenston where the Sir Adam Beck—Niagara generating stations Nos. 1 and 2 and the associated pumping-generating station have a combined generating capacity of 1,815 MW.

Ontario has more thermal capacity than any other province in Canada; capacity installed at the beginning of 1973 was 9,148 MW, about 52% of the national total. Ontario Hydro's Lakeview station at Toronto is Canada's largest thermal generating station with an installed capacity of 2,430 MW. The Lambton station near Sarnia reached its designed capacity of 2,000 MW in 1970. Except for the oil-fired Lennox station (near Kingston) now under construction, Ontario's fossil-fuelled thermal plants are designed to be coal-fired.

The East and West Systems, formerly separate operating entities, were fully integrated in 1970 and, although the capacity of the interconnection is a limiting factor in the exchange of power, the combined facilities now form a unified provincial network. For general day-to-day operations the province is still divided into seven regions, with regional offices located in major municipalities.

The primary concern of the Commission is the provision of electric power by generation or purchase to more than 350 electric utilities for resale in municipalities having cost contracts with the Commission. The Commission also supplies power in bulk to direct customers, mostly industrial customers whose requirements are so large or so unusual as to make service by local municipal utilities impracticable. These include mines, industries in unorganized territories, and certain inter-connected systems.

In addition to these operations which represent about 90% of its energy sales, the Commission delivers electric power to retail customers in rural areas and in a small group of 15 municipalities served by Commission-owned local distribution facilities. However, retail service is generally provided by municipal electric utilities, owned and operated by local commissions which supply ultimate customers in most cities and towns, many villages and certain populous

township areas. In addition to administering the enterprise over which it has direct control, the Commission, under The Power Commission Act and The Public Utilities Act, exercises certain regulatory functions, particularly with respect to the group of municipal electric utilities it serves.

Ontario's total electric generating capacity rose to 17,704 MW at the end of 1973 with the bringing into service of 1,547.5 MW of thermal capacity. Similar large increases are expected to continue in future years with 1,100 MW of thermal (fossil-fuelled) capacity being forecast for 1974, while a total of 17,406 MW has been committed for 1975 and subsequent years. Of this total, 62.5% (11,560 MW) will be nuclear, 37% (6,843 MW) conventional (coal- and oil-fired) thermal, and 0.5% hydro (103 MW).

Purchased-power contracts increased in 1973 by 859 MW, with 800 MW purchased from Hydro-Québec and 50 MW from Manitoba Hydro. Primary peak requirements of Ontario Hydro increased to 13,606 MW, exceeding the 1972 peak by 6.8%.

Additions to Ontario Hydro's system in 1973 included the fourth 540-MW nuclear unit and the sixth 7.5-MW combustion turbine unit at the Pickering station on Lake Ontario. This station now has a total generating capacity of 2,205 MW, second only in size to the 2,430-MW Lakeview (coal-fired) station; however, another four 540-MW nuclear units at Pickering already approved will raise the installed capacity at this station to 4,365 MW (4,320 MW nuclear, 45 MW gas turbine). In 1973 the Pickering plant set a record for nuclear plants: over the year the four CANDU units achieved net capacity factors of 93%, 90%, 86% and 70%, and supplied a total of 14,278 GWh or about 18% of Ontario Hydro's primary energy requirements. Pickering's 1973 output was the equivalent of approximately 5.5 million tons of coal-fired generation.

The remaining capacity installed in 1973 was at Nanticoke, on Lake Erie, where the second and third 500-MW coal-fired units were brought on line. Nanticoke's ultimate capacity, totalling 4,000 MW, is scheduled for completion by 1977.

Other installations scheduled for service in 1974 and later include: eight 800-MW (nominal) nuclear units and four 12-MW gas turbine units at the Bruce station on Lake Huron; four 500-MW oil-fired units at Wesleyville; four 574-MW oil-fired units at the Lennox station on Lake Ontario; and a 3,000-MW (nominal) nuclear station at Bowmanville. The only hydro-electric projects currently scheduled for development in Ontario are a 78-MW plant at Annaprior on the Madawaska River, expected to be operational by 1976, and a 25-MW unit on the Great Lakes Power Company system at Andrews Falls in 1975.

In 1973 it was announced that Ontario intends to exercise its option to purchase the Nos. 1 and 2 units of the Bruce heavy water plant from Atomic Energy of Canada for \$253 million, and construct two additional units; four more such units are under consideration. These, in total, are intended to secure for Ontario Hydro an adequate supply of heavy water, essential to the massive program of nuclear generation that it has under commitment or consideration.

Manitoba. Manitoba Hydro is the primary agency responsible for the generation and distribution of electric power in the province. The corporation was formed April 1, 1961, merging The Manitoba Power Commission, the provincial distributing agency created in 1919 to serve rural Manitoba, and The Manitoba Hydro-Electric Board, the power generating and development authority established in 1951.

Manitoba Hydro serves over 250,000 consumers in some 700 communities throughout rural Manitoba and suburban Winnipeg. Electric energy transmitted over 39,300 miles of Manitoba Hydro line totalled 9,900 GWh in 1973. Manitoba Hydro operates nine hydro-electric stations, two thermal-electric stations and 26 isolated diesel plants with installed capacity totalling 2,235 MW. The nine hydro stations and two thermal stations, operated in conjunction with the City of Winnipeg Hydro Electric System's Pointe du Bois and Slave Falls stations, form the Manitoba Integrated System.

Pine Falls, McArthur, Seven Sisters and Great Falls hydro stations are on the Winnipeg River approximately 70 miles northeast of Winnipeg; Grand Rapids hydro station is on the Saskatchewan River 285 miles northwest of Winnipeg; and Kelsey and Kettle Rapids hydro stations are 400 and 450 miles northeast of Winnipeg on the Nelson River. Responsibility for operation of the Sherritt Gordon Mines, Limited Laurie River hydro stations 1 and 2 was assumed by Manitoba Hydro in May 1970. A power line 140 miles northwest from Thompson to Laurie River ensures that continuing growth in power requirements at Sherritt Gordon's

mining properties and the townsites of Lynn Lake, Fox Lake and Leaf Rapids will be met.

Of the three Prairie Provinces, Manitoba, with immense hydro-electric capabilities on the Winnipeg, Churchill, Nelson and Saskatchewan rivers, is the most generously endowed with water power resources. Until recently, hydro-electric generating stations on the Winnipeg River supplied most of the power requirements of southern Manitoba. Manitoba Hydro's high-voltage, long-distance transmission lines, however, will carry ever-increasing amounts of power south from hydro-electric stations on northern rivers to help meet the province's constantly growing power demands.

Development of hydro-electric sites on the Nelson River promises to provide Manitoba with its main source of new capacity for the present and for some years to come. In 1973 the province had sufficient capacity available to permit the sale of 100 MW of surplus capacity to both Ontario and Saskatchewan and to increase short-term sales to the United States. Three 102-MW units were installed in the Kettle hydro station on the Nelson River in 1973, increasing that plant's total installed capacity to 918 MW in nine units. The plant's ultimate capacity of 1,224 MW will be operational by late 1974, at which time it will represent 40% of the province's generating capacity. Power from this station is transmitted southward by an HVDC transmission system to a terminal station near Winnipeg. The Kettle station is also connected to Manitoba's northern area via alternating current transmission facilities.

At the head of the Nelson River, at the outlet of Lake Winnipeg, a control project is under way to regulate the level of Lake Winnipeg by late 1974. In conjunction with the regulating facilities, a six-unit 168-MW hydro plant (Jenpeg) is scheduled for completion in 1977 with initial service in 1976. On the lower Nelson River, construction of the 10-unit, 980-MW Long Spruce hydro plant has begun. This new plant and the existing Kettle and Kelsey developments will both benefit from regulation of Lake Winnipeg. To further increase and stabilize flows to these and future developments on the Nelson River, construction of works to divert a portion of the Churchill River flow into the lower Nelson River via Southern Indian Lake is also under way; this diversion channel, through the Rat and Burntwood river systems, offers four potential hydro sites totalling approximately 730 MW.

In a number of communities throughout rural Manitoba small local thermal (diesel) generating stations were supplanted by supply from the main Manitoba Hydro system and in 19 other localities additional diesel generating capacity was added; the new diesel capacity installed totalled 3,620 kW but a total of 3,450 kW was removed, leaving a net increase of 170 kW.

Saskatchewan. The Saskatchewan Power Corporation was established in 1949 by the Power Corporation Act (RSS 1965, c.40, as amended) as a successor to the Saskatchewan Power Commission which had been in operation since 1929. The original functions of the Corporation included the generation, transmission and distribution, sale and supply of electric energy with the objective of making electricity available to all the people of the province, in abundance and at reasonable rates. Since 1952, the Corporation has also been authorized to produce or purchase and to transmit, distribute, sell and supply natural or manufactured gas.

In 1972 the Corporation served 126 communities with populations of 500 or more, about 875 smaller communities and 106 summer resorts. In addition, bulk power was supplied to Saskatoon, Swift Current and Battleford. A wholly-owned subsidiary, North-Sask Electric Ltd., is responsible for providing and improving electric service to communities in northern Saskatchewan.

Saskatchewan's present load growth is being met by thermal capacity. A 150-MW thermal unit was commissioned at the Boundary Dam station, near Estevan, in mid-1973, increasing the station's capacity to 582 MW. A 300-MW unit has been committed for the Boundary Dam plant to meet forecast additional capacity requirements by 1977. In 1975 and 1976, single 50-MW gas turbine units are scheduled for installation at a new combustion turbine generating station at Landis near Saskatoon.

To reinforce the North Battleford area and to serve as a future connection between the new Landis thermal plant and the provincial electric system, a transmission line from Ermine to North Battleford was upgraded to 138 kV from 72 kV. A similar line at 138 kV, designed for upgrading to 230 kV, was under construction for service early in 1974 between Coteau Creek and Swift Current.

Beyond 1977 a number of developments are under consideration including a new mine-

mouth thermal development in south-central Saskatchewan and possible hydro developments on the Saskatchewan and Churchill river systems.

Alberta. Electric power generation in Alberta is provided by two major investor-owned companies and three municipal utilities. In addition, several other municipal systems handle local distribution of power purchased from the investor-owned utilities. Electrical utility companies previously known as Canadian Utilities, Limited and Northland Utilities Limited were merged in 1972 into a single company known as Alberta Power Limited.

The Energy Resources Conservation Board regulates the construction and operation of the electric utilities under the Hydro and Electric Energy Act of the province of Alberta, and the Public Utilities Board regulates the rates.

The installed capacity in the province as at December 31, 1972 was 2,788 MW, a 4.1% increase over the 2,679 MW recorded a year earlier; total energy generated increased by 12.6% from 11,098 MWh in 1971 to 22,498 MWh in 1972. While 25.7% of the total generating capability of the province was in hydro sources in 1972, all but 12.5% of the total power generated came from conventional thermal plants with steam units providing 83% of that total.

Three large thermal units were brought on line in 1973, raising the province's installed capacity by 615 MW to a total of 3,405 MW, an increase of 22% over the corresponding total at the end of 1972.

Calgary Power Ltd. commissioned, in 1973, the second 300-MW unit at its Sundance thermal station. Work continued on the third and fourth units of this plant, each rated at 375 MW and scheduled for service in 1975 and 1976. An electrostatic precipitator to handle all flue gases from the first two Sundance units was placed in service and is giving excellent results. Work is proceeding on a 1,200-acre cooling pond to service all four units at Sundance as well as a projected fifth unit; this facility is designed to completely eliminate heat discharge into Wabamun Lake.

Transmission additions included 68 miles of new 138-kV and 17 miles of 138-kV lines converted to 240-kV service. Construction of two 240-kV lines, a 55-mile connection to the British Columbia Hydro system at the Crowsnest Pass and a 60-mile link between Sundance and Edmonton, scheduled for 1973, was delayed pending government approval.

Alberta Power Limited completed installation of the 150-MW unit at the H. R. Milner coal-fired thermal station near Grande Cache. A 150-MW unit is scheduled for 1975 commissioning at the Battle River plant near Forestburg to raise the plant's capacity to 366 MW.

During 1973 Alberta Power Limited added 35 miles of 72-kV and 144-kV transmission lines and is planning construction of some 440 miles of new transmission lines in 1974, including a 175-mile 240-kV line from Slave Lake to Fort McMurray and the adjacent oil sands development area in northern Alberta.

Edmonton Power installed a second 165-MW gas-fired thermal unit at its Clover Bar station, doubling the plant's size. Two similar units are planned for 1976 and 1978.

In 1972 an Electric Utility Planning Council was organized in Alberta to formalize an electric energy planning relationship that has existed between the province's utilities for many years. Working with interested government agencies, the Council is formulating a systematic schedule for power plant construction in Alberta through to the year 2001. Areas under study as future generating plant sites are near Calgary, Edmonton, Camrose and mid-eastern Alberta. While the province-wide planning is being undertaken as a joint effort, actual design and construction of generating facilities will be undertaken by individual utilities or possibly under a joint agreement between two or more utilities.

British Columbia. In terms of installed hydro capacity, British Columbia is exceeded only by Ontario and Quebec. The province has many mountain rivers offering abundant opportunity for the development of hydro-electric power; notable for the magnitude of their power potential are such rivers as the Columbia, the Fraser, the Peace and the Stikine. Hydro developments on smaller rivers in the south once met the major load requirements of the province but in 1968 the immense power resources of the Peace River began to supplement the energy supply. Development of the hydro potential of the Canadian portion of the Columbia River is now under way, utilizing water from three huge storage dams.

The foremost producer and distributor of electric power in British Columbia is the British Columbia Hydro and Power Authority, a provincial Crown corporation. B C Hydro operates a diversified system of public utilities including transportation services by rail, sea and road.

Electric power is generated, transmitted and distributed throughout areas of the province containing more than 90% of the population. Natural gas is purchased and distributed in Greater Vancouver and the Fraser Valley, and liquefied petroleum gas in Greater Victoria.

During 1973 completion of 69.1 MW of thermal generating capacity represented the only new capacity brought into service; however, work on hydro developments on the Peace, Columbia and Kootenay rivers over the next four years will add more than 2,500 MW while thermal completions will account for an additional 219.1 MW.

Thermal capacity added in 1973 consisted of one 40.5-MW unit at a new gas turbine plant at Port Hardy (Quatsino) and a 28.6-MW unit at a similar plant at Prince Rupert. A second 28.6-MW unit at the Prince Rupert plant, and a sixth 150-MW unit at the Burrard thermal station are scheduled for commissioning in 1974, and a 40.5-MW unit is expected to be added at Quatsino in 1975.

At the Peace River hydro station, a ninth unit, rated at 275 MW is scheduled for start-up in 1974, thus raising the installed capacity of this station to 2,091 MW. Provision has been made to add a tenth unit at a later date.

The province's major new sources of power over the short term are associated with development of the Columbia River. Mica Dam, largest and last of three dams constructed in British Columbia under the terms of the International Columbia River Treaty, began storing water in 1973. Excavation of the underground power house at Mica progressed satisfactorily in 1973 and plans are well advanced for installation of a total of six generating units. Four 435-MW units are on order, with two scheduled for operation in 1976 and two in 1977. Two 500-kV transmission lines, each 340 miles long, are under construction to connect the Mica hydro station to the Lower Mainland system.

Work on a second plant in the Columbia River basin, the Kootenay Canal development, proceeded on schedule during 1973. Located on the Kootenay River between Nelson and Castlegar, this project involves a three-mile long canal to divert water from the river, by-passing five small existing generating plants. The new plant will contain four 125-MW generating units, two of which are to be commissioned in 1975 and the remaining two in 1976. This plant will be connected to the Mica transmission lines via a 230-kV tie.

Yukon Territory and Northwest Territories. The Northern Canada Power Commission, a Crown corporation established in 1948, is empowered to survey utility requirements, construct and operate public utility plants in the Northwest Territories, the Yukon Territory and, subject to the approval of the Governor in Council, elsewhere in Canada. The Act requires that projects undertaken by the Commission be self-sustaining; consequently, rates charged for the utilities supplied must provide sufficient revenue to cover interest on investment, repayment of principal over a period of years, operating and maintenance expenses, and a contingency reserve.

A preliminary evaluation of hydro-electric potential has been made for most of the major rivers in the Yukon Territory and in the central portion of the Mackenzie District of the Northwest Territories. Results indicate that a very substantial water-power potential exists; the Yukon River and its tributaries alone represent some of the largest undeveloped hydro-electric resources in North America.

Except for the Yellowknife area the power needs of the Northwest Territories prior to 1965 were met from thermal sources. Commissioning of the Twin Gorges hydro station on the Taltson River in 1965 altered the balance in favour of hydro. However, with several new additions over the 1970-73 period, thermal facilities once again became the dominant source of power. During 1971 thermal generation also became the larger contributor in the Yukon Territory. Most of the thermal-electric energy in the territories has been generated by small diesel units. Diesel generation, employing larger capacity units, will continue to play a major role in meeting load growth in the Northwest Territories and the Yukon Territory, but additional hydro capacity is being developed in both territories and hydro will likely be the predominant source in the long term.

The Northern Canada Power Commission has hydro-electric power developments on the Yukon River near Whitehorse and on the Mayo River near Mayo in the Yukon Territory; in the Northwest Territories, it has developments on the Snare River northwest of Yellowknife and on the Taltson River northeast of Fort Smith.

During 1973 the Commission increased its generating capacity by a total of 11.6 MW, 1.6 MW in the Yukon Territory and 10.0 MW in the Northwest Territories. In addition, it acquired

five local power supply installations formerly operated by the Northwest Territories government. At the close of the year, the Commission was responsible for electrical service in 45 separate communities throughout the North.

In the Yukon Territory, construction commenced on a 30-MW hydro plant on the Aishihik River to tie in with the present Whitehorse—Faro system. This plant is scheduled for service in late 1974.

In the Northwest Territories, investigation and preliminary engineering for a two-unit 14-MW hydro plant on the Snare River, a short distance downstream of the existing Snare Falls hydro plant, was undertaken. This plant, the third on the Snare River, is scheduled for construction in 1974-75 as a more economical alternative to diesel generation to supply load growth in the Yellowknife area.

13.7.9 Electric power statistics

Electric power statistics presented in this Section are based on reports of all electric utilities and all industrial establishments that generate energy, regardless of whether or not any is sold, and therefore show the total production and distribution of electric energy in Canada. Utilities are defined as companies, commissions, municipalities or individuals whose primary function is to sell most of the electric energy that they have either generated or purchased. Industrial establishments are defined as companies or individuals that generate electricity mainly for use in their own plants.

The current series of electric power statistics dates back to 1956. Earlier reports, entitled *Central electric stations*, were concerned solely with the electric utility industry and hence excluded statistics relating to power produced by industrial establishments for their own use, although power sold by such establishments was included. Figures appear in Tables 13.16 - 13.21.

Of the total power generation of 240,212.7 GWh in 1972, 74.9% was produced from hydraulic sources and 25.1% from thermal units. The proportions differed markedly from province to province, ranging from a high of 98.5% hydro and 1.5% thermal in Quebec to 100% thermal generation in Prince Edward Island. Newfoundland, with 96.8% hydro and 3.2% thermal, narrowly edged Manitoba with 95.0% and 5.0% and British Columbia with 92.9% and 7.1%, respectively. The territories produced 73.8% of their power needs from hydro sources and 26.2% from thermal units. Ontario with 55.0% hydro and 45.0% thermal and Saskatchewan with 46.3% hydro and 53.7% thermal were closest of all the provinces to a balance between the two forms of energy source. In decreasing proportion of use of hydraulic sources came New Brunswick with 47.3% against 52.7% thermal; Nova Scotia, 16.8% and 83.2%; and Alberta with 12.5% and 87.5%. More detailed information will be found in Table 13.16.

Table 13.17 gives summary figures of power production and distribution classified by province and Tables 13.18 and 13.19 give figures classified by type of production establishment. Total installed capacity in Canada amounted to 49,943.7 MW in 1972, an increase of 3,267.9 MW over 1971. Of the 1972 total, 44,562.4 MW were accounted for by utilities and the remainder by industrial establishments. During 1971 and 1972, total sales to ultimate customers amounted to 147,202.7 GWh and 162,729.4 GWh, respectively, of which 99.8% in both years was sold by utilities.

Sales to power customers, excluding sales to industrial establishments and generating facilities, made up 46.8% of the total in 1971 and 47.3% in 1972, sales to domestic and farm customers were 31.6% and 30.9%, respectively, and commercial sales 20.6% and 20.9%, respectively. Exports to the United States in 1972 amounted to 11,037.1 GWh, an increase of 3,716.1 GWh over 1971.

Average domestic and farm consumption rose from 7,488 kWh in 1971 to 7,814 kWh in 1972. Among the provinces, the averages in 1972 varied from a low of 4,753 kWh in Prince Edward Island to a high of 9,696 kWh in Manitoba. For domestic and farm customers across Canada the average annual bill was \$126.23 in 1972 as against \$120.48 in 1971. Although many utilities do not keep records on farm customers separate from other domestic customers, the data reported on farm service in Manitoba, Saskatchewan and Alberta indicate that the average consumption rose from 11,006 kWh per customer in 1971 to 11,630 kWh in 1972 and the average bill from \$189.40 to \$195.69. Table 13.20 provides more detailed information including the total number of customers served.

In 1972 natural gas accounted for 15.7% of thermal generation by utilities, coal for 62.0%, petroleum fuels for 10.0% and nuclear fuel for 12.3%; corresponding proportions in 1971 were 10.8%, 69.5%, 11.8% and 7.9%, respectively. Details of the type of fuel used, by province, appear in Table 13.21.

Sources

13.1 - 13.7 Energy Development Sector, Department of Energy, Mines and Resources.

Tables

.. not available
 ... not appropriate or not applicable
 — nil or zero
 -- too small to be expressed
 e estimate
 p preliminary
 r revised
 certain tables may not add due to rounding

bbl barrels
 b/d barrels a day
 Mcf thousand cubic feet
 MMcf million cubic feet
 MMMcf billion cubic feet
 MMMMcf trillion cubic feet
 kW kilowatt (1,000 watts)
 MW megawatt (1,000,000 watts)
 GW gigawatt (1,000,000,000 watts)
 million = 10⁶, billion = 10⁹, trillion = 10¹²

13.1 Oil, supply and demand, 1962, 1972 and 1973 (thousand barrels a day)

Item	1962	1972	1973
Production			
Crude oil	715	1,698	1,962
Gas plant, liquefied petroleum gas	16	133	158
Imports			
Crude oil	369	770	865
Products	83	144	121
Total, supply	1,183	2,745	3,106
Domestic demand	938	1,615	1,711
Exports			
Crude oil	236	951	1,131
Products	16	202	245
Total, demand	1,190	2,768	3,087
Inventory change	-7	-23	+19

13.2 Natural gas, supply and demand, 1962, 1972 and 1973 (billion cubic feet)

Item	1962	1972	1973
Net production	894	2,914	3,132
Marketable pipeline gas	769	2,284	2,439
Imports	6	16	15
Net storage	—	-6	-2
Total, supply	775	2,294	2,452
Domestic demand	432	1,284	1,410
Exports	343	1,010	1,042
Total, demand	775	2,294	2,452

13.3 Coal and coke, supply and demand, 1962, 1972 and 1973 (thousand tons)

Item	1962	1972	1973
Production	10,217	20,709	22,567
Imports			
Coal	12,322	18,567	16,639
Coke	233	777	666
Total, supply	22,772	40,055	39,872
Domestic demand	22,515	26,710	27,551
Exports			
Coal	894	9,421	11,341
Coke	133	263	405
Total, demand	23,542	36,394	39,297
Inventory change	-770	3,661	575

13.4 Electric energy, supply and demand, 1962, 1972 and 1973 (gigawatt hours)

Item	1962	1972	1973
Generation	117,468	237,627	262,335
Hydro	104,050	178,169	194,483
Thermal	13,418	52,718	54,702
Nuclear	—	6,740	13,150
Imports	2,779	2,441	2,223
Total, supply	120,247	240,068	264,558
Domestic demand	116,135	229,691	247,658
Exports	4,112	10,377	16,900
Total, demand	120,247	240,068	264,558

13.5 Wells drilled, by type and region, 1971 and 1972

Region	Oil		Gas		Dry		Total	
	1971	1972	1971	1972	1971	1972	1971	1972
Western Canada	676	868	838	1,164	1,420	1,615	2,934	3,647
Alberta	361	514	691	1,010	962	1,195	2,014	2,719
Saskatchewan	266	316	108	86	261	232	635	634
British Columbia	46	37	36	61	112	119	194	217
Manitoba	2	—	—	—	13	6	15	6
Yukon Territory and Northwest Territories	1	1	3	7	72	63	76	71
Eastern Canada	2	4	48	36	107	122	157	162
Ontario	2	4	47	34	83	97	132	135
Quebec	—	—	—	—	5	7	5	7
Atlantic Provinces	—	—	—	—	1	2	1	2
East coast off-shore	—	—	1	2	18	16	19	18
Total	678	872	886	1,200	1,527	1,737	3,091	3,809

13.6 Crude oil and equivalent production, by province, 1970-73 (thousand barrels a day)

Item and province	1970	1971	1972	1973 ^e	Percentage change 1972-73
Crude oil	1,229	1,304	1,481	1,735	+17.1
Alberta	892	973	1,160	1,423	+22.7
Saskatchewan	245	242	237	233	-1.7
British Columbia	70	69	65	60	-7.7
Manitoba	16	15	14	14	—
Other	6	5	5	5	—
Pentanes plus/condensate	121	128	166	171	+3.0
Alberta	117	124	162	167	+3.0
Saskatchewan	1	1	1	1	—
British Columbia	3	3	3	3	—
Synthetic crude oil					
Canada—Alberta	33	43	51	50	-2.07
Total	1,383	1,475	1,698	1,956	+15.2
Alberta	1,042	1,140	1,373	1,640	+19.4
Saskatchewan	246	243	238	234	-1.7
British Columbia	73	72	68	63	-7.4
Manitoba	16	15	14	14	—
Other	6	5	5	5	—

13.7 Operating and financial statistics of oil pipelines¹, 1969-72

Item		1969	1970	1971	1972
Pipeline mileage					
Trunk lines	No.	10,670	10,538	11,114	11,462
Gathering lines	"	6,436 ¹	6,525 ¹	6,724 ¹	6,849 ¹
Daily average of net deliveries					
Trunk lines	'000 bbl	1,847	2,086	2,226	2,543
Gathering lines	"				
Barrel miles					
Trunk lines	'000,000	319,984	367,766	401,807	477,785
Average miles per barrel					
Trunk lines	No.	475	483	495	515
Property account	\$'000	884,602	900,775	940,480	1,008,334
Long-term debt	"	375,798	407,956	389,158	375,033
Operating revenues ²	"	209,911	231,773	248,299	281,516
Operating expenses	"	49,640	55,436	59,538	69,453
Net income (after income tax) ³	"	60,380	75,959	85,572	101,491
Average employees ²	No.	1,428	1,414	1,429	1,404
Salaries and wages ²	\$'000	13,740	15,000	16,090	17,095

¹Includes 1,781 miles of gathering lines within producing fields in 1969; 1,715 miles in 1970; 1,869 miles in 1971; and 1,961 miles in 1972.

²Revenue and employee data are incomplete because pipeline operations represent only part of the activities of some companies and the relevant data are not separable.

13.8 Oil refining, by province, 1973

Province or territory	Existing refineries ¹			New refineries planned or under construction	
	No.	Capacity '000 b/d	% of total	Capacity '000 b/d	Scheduled for completion
Newfoundland	2	112	6.1	300	1978
Nova Scotia	3	178	9.7	200	1977
New Brunswick	1	114	6.2	—	...
Quebec	7	598	32.7	—	...
Ontario	7	407	22.3	95	1976
Manitoba	2	48	2.6	—	...
Saskatchewan	3	65	3.6	—	...
Alberta	7	173	9.5	140	1974
British Columbia	7	129	7.1	—	...
Northwest Territories	1	3	0.2	—	...
Total	40	1,827	100.0	735	...

¹Expansion of some existing refineries is in progress.

13.9 Domestic consumption of selected refined petroleum products, by region, 1963, 1971 and 1972 (thousand barrels a day)

Region and year		Gasoline	Aviation fuel	Fuel oil			Total
				Light	Diesel	Heavy	
Atlantic Provinces and Quebec	1963	95.0	9.5	109.0	27.2	107.8	348.5
	1971	157.6	18.8	172.1	43.9	217.6	610.0
	1972	168.1	19.7	188.3	47.9	225.4	649.4
Ontario	1963	120.3	5.1	99.4	16.0	60.7	301.5
	1971	180.0	13.0	120.3	32.9	90.5	436.7
	1972	188.2	13.6	123.0	34.4	86.9	446.1
Prairie Provinces and Northwest Territories	1963	75.8	4.8	21.0	26.7	12.0	140.3
	1971	102.2	10.3	22.3	42.1	9.4	186.3
	1972	106.4	11.2	23.7	46.3	9.8	197.4
British Columbia	1963	29.5	1.7	17.1	12.4	18.6	79.3
	1971	49.9	5.3	23.9	24.2	24.2	127.5
	1972	53.1	5.5	25.0	26.2	24.3	134.1
Canada	1963	320.6	21.1	246.5	82.3	199.1	869.6
	1971	489.7	47.4	338.6	143.1	341.7	1,360.5
	1972	515.8	50.0	360.0	154.8	346.4	1,427.0

13.10 Coal production¹, by type and province, 1971 and 1972

Type and province	1971		1972	
	tons	\$	tons	\$
Bituminous	10,706,282	108,268,335	12,520,828	133,393,932
Nova Scotia	1,965,489	23,020,853	1,425,439	16,116,667
New Brunswick	517,209	3,934,987	429,544	3,483,530
Alberta	3,586,573	35,336,368	4,118,747	41,542,488
British Columbia	4,637,011	45,976,127	6,547,098	72,251,247
Subbituminous Alberta	4,425,731	7,081,913	4,905,690	10,654,387
Lignite Saskatchewan	3,300,186	6,376,929	3,282,798	6,551,991
Total	18,432,199	121,727,177	20,709,316	150,600,310

¹Includes production of clean coal and shipments of raw coal from the mine.

13.11 Installed generating capacity, as at Dec. 31, 1972 and 1973 (megawatts)

Year and province or territory	Steam		Internal combustion	Gas turbine	Total thermal	Hydro	Total
	Conventional	Nuclear					
1972							
Newfoundland (incl. Labrador)	347	—	55	28	430	2,875	3,305
Prince Edward Island	71	—	7	15	93	—	93
Nova Scotia	863	—	7	25	895	160	1,055
New Brunswick	619	—	8	23	650	680	1,330
Quebec	676	266	56	36	1,034	13,764	14,798
Ontario	6,897	1,860	35	357	9,149	7,008	16,157
Manitoba	423	—	23	28	474	1,863	2,337
Saskatchewan	936	—	33	89	1,058	567	1,625
Alberta	1,831	—	41	198	2,070	718	2,788
British Columbia	1,136	—	146	195	1,477	4,803	6,280
Yukon Territory	—	—	34	—	34	26	60
Northwest Territories	1	—	64	2	67	35	102
Canada, 1972	13,800	2,126	509	996	17,431	32,499	49,930
Net additions, 1972	784	556	4	10	1,354	1,898	3,252
Percentage increase, 1971-72	6.0	35.4	0.8	1.0	8.4	6.2	7.0
1973							
Newfoundland (incl. Labrador)	347	—	56	28	431	4,300	4,731
Prince Edward Island	71	—	7	40	118	—	118
Nova Scotia	1,013	—	7	25	1,045	160	1,205
New Brunswick	619	—	8	23	650	680	1,330
Quebec	676	266	62	36	1,040	13,800	14,840
Ontario	7,897	2,400	35	364	10,696	7,008	17,704
Manitoba	423	—	23	28	474	2,169	2,643
Saskatchewan	1,086	—	33	89	1,208	567	1,775
Alberta	2,446	—	43	198	2,687	718	3,405
British Columbia	1,136	—	142	265	1,543	4,803	6,346
Yukon Territory	—	—	36	—	36	26	62
Northwest Territories	1	—	74	2	77	35	112
Canada, 1973	15,715	2,666	526	1,098	20,005	34,266	54,271
Net additions, 1973	1,915	540	17	102	2,574	1,749	4,323
Percentage increase, 1972-73	13.9	25.4	3.3	10.2	14.8	5.4	8.7

13.12 Capability and firm power peak-load requirements, actual 1961 and 1969-72, and forecast 1973-77 (megawatts)

Item	Actual					Forecast				
	1961	1969	1970	1971	1972	1973	1974	1975	1976	1977
NET GENERATING CAPABILITY										
Hydro-electric	18,389	26,134	27,392	29,593	31,455	32,876	34,431	35,729	38,675	39,686
Steam, conventional	3,773	10,019	12,494	12,568	12,725	15,100	15,855	17,446	21,141	22,698
nuclear	—	208	194	1,320	1,753	2,536	2,536	2,536	3,281	4,026
Internal combustion	240	321	328	350	376	385	378	388	387	401
Gas turbine	351	870	914	985	1,098	1,195	1,307	1,489	1,603	1,603
Total, net generating capability	22,753	37,552	41,322	44,816	47,407	52,092	54,507	57,588	65,087	68,414
Receipts of firm power from United States	2	3	93	3	5	5	5	5	5	5
Deliveries of firm power to United States	146	111	170	453	427	397	390	162	507	507
Total, net capability	22,609	37,444	41,245	44,366	46,985	51,700	54,122	57,431	64,585	67,912
PEAK LOADS										
Firm power peak loads within Canada	18,353	32,022	34,447	35,720	38,823	42,367	45,080	47,999	50,987	54,198
Indicated shortages	—	70	145	—	98	—	—	—	—	—
Total, indicated peak loads within Canada	18,353	32,092	34,592	35,720	38,921	42,367	45,080	47,999	50,987	54,198
Indicated reserve	4,256	5,352	6,653	8,646	8,064	9,333	9,042	9,432	13,598	13,714

13.13 Electric energy consumption in Canada, selected years 1950-72

Year	Total consumption GWh	Percentage consumption			
		Commercial ¹	Domestic and farm	Industrial	Losses and unaccounted
1950	53,459	11	13	67	9
1955	77,946	12	16	63	9
1960	109,302	12	19	60	9
1965	144,165	16	21	55	8
1970 ^r	202,337	14	21	57	8
1972	231,557	15	22	54	9

¹Includes street lighting.

13.14 Electric energy consumption, by region, 1960, 1965 and 1972

Region and year		Total consumption <i>GWh</i>	% of total consumption	Percentage consumption			
				Commer- cial ¹	Domestic and farm	Industrial	Losses and unaccounted
Atlantic Provinces	1960	4,924	5	13	20	58	9
	1965	8,228	6	15	18	60	7
	1972	15,351	7	17	21	55	7
Quebec	1960	44,002	40	7	11	74	8
	1965	52,229	36	12	16	66	6
	1972	76,289	33	15	19	58	8
Ontario	1960	37,157	34	15	25	48	12
	1965	49,276	34	20	26	45	9
	1972	79,089	34	16	25	50	9
Prairie Provinces	1960	9,617	9	22	31	34	13
	1965	14,994	10	26	30	34	10
	1972	28,687	12	15	26	47	12
British Columbia ²	1960	13,602	12	9	16	68	7
	1965	19,438	14	12	15	66	7
	1972	32,141	14	13	17	62	8
Canada	1960	109,302	100	12	19	60	9
	1965	144,165	100	16	21	55	8
	1972	231,557	100	15	22	54	9

¹Includes street lighting.²Includes the Yukon Territory and Northwest Territories.

13.15 Electric energy consumption per capita, by region, 1960, 1965 and 1972

Region and year		Total consumption GWh	Population '000	Consumption per capita kWh
Atlantic Provinces	1960	4,924	1,867	2,600
	1965	8,228	1,968	4,200
	1972	15,351	2,082	7,400
Quebec	1960	44,002	5,142	8,600
	1965	52,229	5,685	9,200
	1972	76,289	6,050	12,600
Ontario	1960	37,157	6,111	6,100
	1965	49,276	6,788	7,300
	1972	79,089	7,824	10,100
Prairie Provinces	1960	9,617	3,112	3,100
	1965	14,994	3,365	4,500
	1972	28,687	3,562	8,100
British Columbia ¹	1960	13,602	1,638	8,300
	1965	19,438	1,838	10,600
	1972	32,141	2,302	14,000
Canada	1960	109,302	17,870	6,100
	1965	144,165	19,644	7,300
	1972	231,557	21,820	10,600

¹Includes the Yukon Territory and Northwest Territories.

13.16 Electric energy generated, by type of station, 1961 and 1968-72, and by province 1971 and 1972 (megawatt hours)

Year and province or territory	Generated by		Total	Year and province or territory	Generated by		Total
	Water power	Thermal power			Water power	Thermal power	
1961	103,919,241	9,794,077	113,713,318	1970	156,708,854	48,014,043	204,722,897
1968	134,972,933	41,405,342	176,378,275	1971	160,984,485	55,487,718	216,472,203
1969	149,246,787	41,855,443	191,102,230	1972	179,998,571	60,214,177	240,212,748
1971				1972			
Newfoundland	4,723,275	308,146	5,031,421	Newfoundland	10,930,807	359,522	11,290,329
Prince Edward Island	—	274,026	274,026	Prince Edward Island	—	308,116	308,116
Nova Scotia	782,885	3,332,121	4,115,006	Nova Scotia	762,791	3,767,335	4,530,126
New Brunswick	2,070,619	3,609,076	5,679,695	New Brunswick	2,966,540	3,303,072	6,269,612
Quebec	75,355,311	891,995	76,247,306	Quebec	77,769,854	1,171,618	78,941,472
Ontario	38,110,708	30,528,819	68,639,527	Ontario	41,263,754	33,765,808	75,029,562
Manitoba	9,122,313	615,887	9,738,200	Manitoba	10,367,921	541,921	10,909,842
Saskatchewan	2,568,339	3,507,029	6,075,368	Saskatchewan	3,125,117	3,621,524	6,746,641
Alberta	1,201,099	9,896,465	11,097,564	Alberta	1,566,057	10,931,816	12,497,873
British Columbia	26,645,584	2,392,698	29,038,282	British Columbia	30,758,860	2,344,111	33,102,971
Yukon Territory	191,325	47,329	238,654	Yukon Territory	194,939	48,391	243,330
Northwest Territories	213,027	84,127	297,154	Northwest Territories	237,681	105,193	342,874
Canada, 1971	160,984,485	55,487,718	216,472,203	Canada, 1972	179,944,321	60,268,427	240,212,748

13.17 Summary electric power statistics, by province, 1971 and 1972

Year and province or territory	Installed generating capacity <i>kW</i>	Energy made available in Canada <i>MWh</i>	Exported to United States <i>MWh</i>	Ultimate customers ¹	Total revenue from ultimate customers ² <i>\$'000</i>	Electrical utilities	
						Employees	Salaries and wages <i>\$'000</i>
1971							
Newfoundland	2,353,457	4,770,954	—	120,443	39,444	1,540	9,711
Prince Edward Island	92,241	274,026	—	32,596	7,308	194	1,479
Nova Scotia	970,541	4,122,346	—	252,283	59,548	2,274	17,747
New Brunswick	1,220,349	4,617,727	1,334,716 ³	194,892	54,779	1,357	12,461
Quebec	14,784,854	70,747,544	66,868	1,991,094	513,536	13,884	134,807
Ontario	14,992,906	72,955,891	4,060,059 ⁴	2,482,121	688,052	20,875	220,958
Manitoba	2,100,025	9,313,091	686,787 ⁵	324,089	85,489	2,664	23,203
Saskatchewan	1,532,860	5,557,285	—	319,968	80,287	1,637	16,360
Alberta	2,678,999	10,946,986	—	506,767	129,533	2,552	23,536
British Columbia	5,798,069	29,040,418 ⁶	820,074 ⁷	805,717	208,940	3,247	33,675
Yukon Territory	60,110	238,654	—	5,321	4,648	116	933
Northwest Territories	91,322	297,154	—	6,817	6,721	286	2,955
Canada, 1971	46,675,733	212,882,076 ⁸	6,968,504 ⁹	7,042,108	1,878,285	50,626	497,825
1972							
Newfoundland	3,304,336	4,889,793	—	130,031	40,941	1,518	11,755
Prince Edward Island	92,241	308,116	—	33,878	8,143	196	1,643
Nova Scotia	1,055,111	4,673,091	—	259,834	65,956	2,340	19,682
New Brunswick	1,330,349	5,479,713	1,884,775	204,039	62,772	1,386	13,499
Quebec	14,798,593	76,289,184	82,785	2,043,362	553,100	14,437	149,961
Ontario	16,155,516	79,088,877	6,075,461 ¹	2,552,792	765,995	21,310	221,930
Manitoba	2,337,045	10,202,656	845,898 ²	332,797	92,123	2,689	25,729
Saskatchewan	1,624,910	6,129,483	—	326,521	85,409	1,579	17,399
Alberta	2,788,179	12,355,322	—	531,926	144,876	2,347	22,598
British Columbia	6,280,606	31,554,502	2,148,132 ³	846,129	232,061	3,347	36,920
Yukon Territory	60,420	243,330	—	5,566	4,859	103	1,043
Northwest Territories	101,527	342,874	—	9,510	8,719	243	3,104
Canada, 1972	49,928,833	231,556,941	11,037,051	7,276,385	2,064,954	51,495	525,263

¹Excludes industrial establishments that purchase power and have generating facilities.

²Excludes revenue from sales to industrial establishments that purchase power and have generating facilities, totalling \$113,861,000 in 1971 and \$115,680,000 in 1972.

³Includes 54,429 MWh "no value" energy.

⁴Includes 1,104,061 MWh "no value" energy.

⁵Includes 1,446 MWh "no value" energy.

⁶Includes 371,862 MWh "no value" energy.

⁷Includes 1,492,643 MWh "no value" energy.

⁸Includes 741 MWh "no value" energy.

⁹Includes 44,748 MWh "no value" energy.

13.18 Summary electric power statistics, by type of establishment, 1971 and 1972

Year and item		Electrical utilities			Industrial establishments	Total
		Publicly operated	Privately operated	Total		
1971						
Installed generating capacity	<i>kW</i>	36,091,981	5,277,243	41,369,224	5,306,509	46,675,733
Energy generated	<i>MWh</i>	162,892,104	21,067,764	183,959,868	32,512,335	216,472,203
Hydro	"	120,444,563	12,870,854	133,315,417	27,669,068	160,984,485
Thermal	"	42,447,541	8,196,910	50,644,451	4,843,267	55,487,718
Energy made available in Canada	"	"	"	"	"	212,882,076 [†]
Disposal of energy in Canada [†]	"	149,946,062 [†]	14,980,171	164,926,233 [†]	47,955,843	212,882,076 [†]
Energy exported to United States	"	5,489,235 [†]	921,735	6,410,970 [†]	557,534	6,968,504 [†]
Ultimate customers in Canada	<i>No.</i>	6,464,157	572,798	7,036,955	5,153	7,042,108
Domestic and farm	"	5,719,767	490,537	6,210,304	4,836	6,215,140
Commercial	"	678,694	71,090	749,784	298	750,082
Power	"	65,696	11,171	76,867	19	76,886
Street lighting	"	"	"	"	"	"
Revenue from ultimate customers [‡]	<i>\$'000</i>	1,701,702	174,617	1,876,319	1,966	1,878,285
Revenue from exports to United States	"	34,887 [†]	5,521	40,408 [†]	3,622	44,030 [†]
Employees	<i>No.</i>	46,426	4,200	50,626	"	"
Salaries and wages	<i>\$'000</i>	463,007	34,818	497,825	"	"
1972						
Installed generating capacity	<i>kW</i>	38,103,992	6,443,598	44,547,590	5,381,243	49,928,833
Energy generated	<i>MWh</i>	176,806,167	29,496,996	206,303,163	33,909,585	240,212,748
Hydro	"	131,301,267	20,226,473	151,527,740	28,416,581	179,944,321
Thermal	"	45,504,900	9,270,523	54,775,423	5,493,004	60,268,427
Energy made available in Canada	"	"	"	"	"	231,556,941
Disposal of energy in Canada [†]	"	166,462,636	16,097,572	182,560,208	48,996,733	231,556,941
Energy exported to United States	"	9,250,402	824,582	10,074,984	962,067	11,037,051
Ultimate customers in Canada	<i>No.</i>	6,669,758	601,511	7,271,269	5,116	7,276,385
Domestic and farm	"	5,904,448	515,776	6,420,224	4,793	6,425,017
Commercial	"	696,816	73,286	770,102	304	770,406
Power	"	68,494	12,449	80,943	19	80,962
Street lighting	"	"	"	"	"	"
Revenue from ultimate customers [‡]	<i>\$'000</i>	1,870,590	192,353	2,062,943	2,011	2,064,954
Revenue from exports to United States	"	56,055	4,745	60,800	5,244	66,044
Employees	<i>No.</i>	47,188	4,307	51,495	"	"
Salaries and wages	<i>\$'000</i>	486,550	38,713	525,263	"	"

[†]Excludes sales by electrical utilities to industrial establishments with generating facilities, sales by industrial establishments with generating facilities to electrical utilities, and inter-industrial sales.

[‡]Excludes revenue from sales by electrical utilities to industrial establishments with generating facilities, and inter-industrial sales.

13.19 Electric power generated classified by type of establishment, by province, 1971 and 1972 (megawatt hours)

Year and province or territory	Electrical utilities		Industrial establishments	Total
	Publicly operated	Privately operated		
1971				
Newfoundland	1,589,236	3,085,183	357,002	5,031,421
Prince Edward Island	2,124	271,902	—	274,026
Nova Scotia	2,412,191	1,465,972	236,843	4,115,006
New Brunswick	5,005,202	96,052	578,441	5,679,695
Quebec	54,353,545	5,962,372	15,931,389	76,247,306
Ontario	64,364,651	1,562,128	2,712,748	68,639,527
Manitoba	9,729,185	—	9,015	9,738,200
Saskatchewan	5,415,563	473,459	186,346	6,075,368
Alberta	2,603,792	7,804,798	688,974	11,097,564
British Columbia	16,957,259	312,050	11,768,973	29,038,282
Yukon Territory	192,005	20,349	26,300	238,654
Northwest Territories	267,351	13,499	16,304	297,154
Canada, 1971	162,892,104	21,067,764	32,512,335	216,472,203
1972				
Newfoundland	1,888,749	8,991,583	409,997	11,290,329
Prince Edward Island	836	307,280	—	308,116
Nova Scotia	2,384,911	1,701,978	443,237	4,530,126
New Brunswick	5,445,727	150,717	673,168	6,269,612
Quebec	56,405,328	6,494,745	16,041,399	78,941,472
Ontario	69,989,856	1,833,390	3,206,316	75,029,562
Manitoba	10,899,872	—	9,969	10,909,842
Saskatchewan	5,831,137	711,115	204,389	6,746,641
Alberta	2,840,544	8,938,468	718,861	12,497,873
British Columbia	20,638,977	330,249	12,133,745	33,102,971
Yukon Territory	196,113	21,293	25,924	243,330
Northwest Territories	284,116	16,178	42,580	342,874
Canada, 1972	176,806,167	29,496,996	33,909,585	240,212,748

13.20 Domestic and farm service by electrical utilities and industrial establishments, 1969-72

Item		1969	1970	1971	1972
Customers	No.	5,918,409	6,076,789	6,215,140	6,425,017
Megawatt hours sold	"	40,446,333	43,430,777	46,541,538	50,205,464
Revenue received	\$'000	607,336 ^r	685,266	748,779	811,014
Kilowatt hours per customer	No.	6,834	7,147	7,488	7,814
Average annual bill	\$	102.62 ^r	112.77	120.48	126.23
Revenue per kWh	¢	1.50	1.58	1.61	1.62

13.21 Fuel used by electrical utilities to generate power, by province, 1971 and 1972

Year and province or territory	Coal		Petroleum fuels		Gas	
	Quantity tons	Value \$	Quantity gal	Value \$	Quantity Mcf	Value \$
1971						
Newfoundland	—	—	19,818,595	2,135,908	—	—
Prince Edward Island	—	—	22,108,564	2,079,466	—	—
Nova Scotia	759,253	8,594,614	136,202,144	7,851,207	—	—
New Brunswick	299,188	2,431,327	152,252,229	11,316,188	—	—
Quebec	—	—	31,248,813	2,731,622	—	—
Ontario	9,435,911	99,980,651	25,926,085	3,852,710	8,924,957	4,817,124
Manitoba	492,263	2,085,303	4,719,648	795,911	992,547	272,668
Saskatchewan	2,199,887	3,822,377	4,023,447	206,634	15,046,358	3,562,672
Alberta	4,026,906	5,286,222	5,398,333	345,525	41,374,305	7,542,179
British Columbia	—	—	22,351,208	2,905,946	3,994,358	984,648
Yukon Territory	—	—	1,694,835	480,095	—	—
Northwest Territories	—	—	4,700,184	1,208,511	—	—
Canada, 1971	17,213,408	122,200,494	430,444,085	35,909,723	70,332,525	17,179,291
1972						
Newfoundland	—	—	24,157,211	2,848,236	—	—
Prince Edward Island	—	—	25,250,755	2,275,513	—	—
Nova Scotia	730,860	7,859,603	166,760,516	9,895,248	—	—
New Brunswick	309,651	2,639,223	133,976,774	10,105,018	—	—
Quebec	—	—	18,825,414	2,042,931	—	—
Ontario	8,375,955	95,294,079	14,652,892	2,300,657	37,600,098	20,004,098
Manitoba	452,093	2,191,506	4,846,400	890,500	497,158	156,709
Saskatchewan	2,364,435	4,392,657	2,714,388	216,268	13,776,155	3,627,902
Alberta	4,533,784	6,173,133	2,729,018	302,595	44,777,900	8,584,317
British Columbia	—	—	11,072,072	2,056,704	6,477,699	1,370,330
Yukon Territory	—	—	1,775,735	524,519	—	—
Northwest Territories	—	—	5,930,558	1,628,784	—	—
Canada, 1972	16,766,778	118,550,201	412,691,733	35,086,973	103,129,010	33,743,356

Sources

13.1 - 13.21 Manufacturing and Primary Industries Division, Industry Statistics Branch, Statistics Canada; and Energy Development Sector, Department of Energy, Mines and Resources.

Chapter 14

Housing and construction

14.1 Housing

Although the federal government entered the housing field in 1918 when it made money available to the provinces for re-lending to municipalities, the first general piece of federal housing legislation was the Dominion Housing Act passed in 1935. This was followed by the National Housing Acts of 1938 and 1944. The present National Housing Act, defined as “an Act to promote the construction of new houses, the repair and modernization of existing houses and the improvement of housing and living conditions”, was passed in 1954.

In general the federal government, through successive Housing Acts, has attempted to stimulate and supplement the market for housing rather than assume direct responsibilities that belong to other levels of government or that could be borne more effectively by private enterprise. The aim has been to increase the flow of mortgage money and to encourage lenders to make loans on more favourable terms to prospective home-owners. Almost half of the country's present stock of approximately 6.2 million dwelling units have been built since the first covering legislation was enacted. About one third of these were financed in one way or another under the Housing Acts.

The Farm Credit Act, providing for federal long-term loan assistance for housing and other farm purposes, and the Farm Improvement Loans Act, providing for guarantees for intermediate- and short-term loans made by approved lending agencies to farmers for housing and other purposes, are described in greater detail in Chapter 11. The Veterans' Land Act provides a form of loan and grant assistance to veterans for housing and other purposes; it is dealt with in Chapter 6. These three statutes are concerned only incidentally with housing.

All provinces have complementary legislation providing for joint federal-provincial housing and land assembly projects, and in addition, most provinces have enacted separate legislation on housing. Details are available from the respective provincial government departments.

Central Mortgage and Housing Corporation. The Central Mortgage and Housing Corporation is a federal Crown corporation created by Act of Parliament in 1945 (RSC 1970, c.C-16). Under this Act CMHC is empowered to make loans and contributions to various individuals and organizations for housing. Such funds may be used for construction of new housing or rehabilitation of existing units, urban renewal, planning and servicing new communities, land assembly, construction of student housing, the construction and expansion of sewerage projects, as “start-up funds” to enable individuals or private non-profit organizations to undertake housing projects for low-income groups, for housing on Indian reserves and various other purposes.

The Corporation may also construct and administer housing and certain other buildings on its own account and for other government departments and agencies. Its responsibilities include providing architectural and engineering designs, calling public tenders and administering construction contracts, including any necessary on-site surveying and engineering. The Corporation carries out full architectural and engineering inspections on such contracts.

CMHC is concerned with building technology in formulating standards for housing construction, the use of suitable materials and the development of new building techniques. The Corporation has no laboratory facilities but has experience of performance in the field and seeks the advice of specialists in various agencies and departments of the federal government. Research is conducted into the factors affecting housing such as the demand for new housing, the volume of new housing being built and the supply of mortgage money for such construction. The Corporation also co-ordinates and publishes statistical information on housing. Funds provided under the NHA support the Canadian Housing Design Council, the Community Planning Association of Canada and the Canadian Council on Urban and Regional Research.

14.2 Federal housing activity, 1973

In terms of housing construction 1973 was the most productive year in Canada's history. The number of units started reached a total of 268,529, an increase of 7% over the previous

record of 249,914 established in 1972 (Table 14.1). This is well ahead of the annual rate of 245,000 starts that the Economic Council of Canada had forecast would be required to meet the needs of Canadians. The greatest increase in starts was in single-family dwellings, although multiple units also increased. Most of the units, about 240,000, were financed by the private sector. Of the approximately 32,000 financed directly by the Corporation, nearly all were initiated under National Housing Act programs which provide low-cost loans and other assistance for low- or moderate-income people.

The average family income of purchasers of NHA-financed houses in 1973 was \$12,856. These incomes were 7.8% higher than the corresponding averages for purchasers in 1972, in line with the general increase in incomes in 1973. As in previous years relatively few purchasers of NHA homes, 5.9% in 1973 and 9.6% in 1972, were drawn from the lower third of the range of family income. The average age of purchasers of NHA houses was 32.2 years in 1972 compared to 32 in 1973. In 1973 just under one half of the purchasers had two or more children and 26.8% had previously been home-owners.

The average cost of NHA-financed single-family dwellings purchased in 1973, including many started in the previous year, was \$24,678. On these houses purchasers provided down payments averaging \$4,515. Compared with 1972 these payments represented an increase of 9.4% in cost and a decrease of 12.9% in down payment. As in other years most of the NHA-financed single detached houses purchased in 1973 were bungalows, representing 68.9% of the total compared with 68.4% in 1972. The proportion of split-level dwellings decreased from 27.0% to 25.4%. Two-storey dwellings dropped from 5.6% in 1972 to 3.5% in 1973. Of these dwellings about 92.8% had one to three bedrooms and the remainder had four or more. Types of dwelling units started in selected metropolitan areas in 1972 and 1973 are given in Table 14.2.

14.2.1 Direct and insured lending

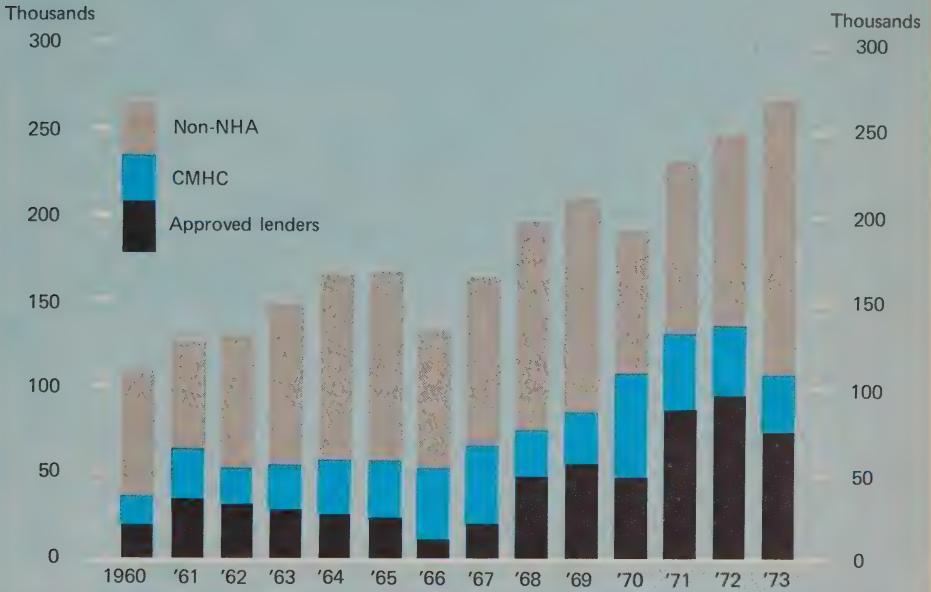
Direct loans. CMHC may make direct loans in the open market for both home-ownership and rental housing if, in the opinion of the Corporation, loans are not available through approved lenders. Loans are made to any eligible home-owner applicant but direct loans to builders are normally subject to a requirement that the houses be pre-sold to buyers meeting certain criteria.

A total of \$38.2 million in direct Corporation loans to the private sector was approved during 1973. This represented 2.1% of the total NHA loans for home-ownership and rental loans during the year. In the private sector, the Corporation's lending continued to be directed mainly to families with moderate incomes in smaller centres and resource areas in which mortgage financing from the approved lenders is difficult to obtain. The Corporation made loans for 898 new family housing units in 1973, compared to 6,046 units in 1972 and 13,261 units in 1971.

Direct loans and grants are also provided under the Assisted Home-Ownership Program to help low- and moderate-income families to purchase a home without spending more than 25% of their gross income on shelter. Assistance is provided in accordance with a graduated scale of adjusted family incomes. As family income decreases assistance increases. Following interest rate adjustments down to CMHC's lowest rate a maximum grant of \$300 a year is available to further reduce monthly charges. Generally the program will serve families in the income range of \$6,000 to \$11,000 per annum. The total number of new units financed in 1973 was 569 for home-owner applicants and 4,944 units for sale by builders. During the year financing was provided for 1,392 existing units. The total amount loaned was \$133,059 million.

CMHC may make loans to any organization, corporation or individual to assist in financing the construction of low-rental housing projects. In addition to self-contained units, development may include hostel or dormitory accommodation for elderly and low-income individuals. Loans may be made for a maximum of 95% of the lending value established by CMHC. The repayment period may not exceed the useful life of the project or a maximum of 50 years. Interest rates are established by the Governor in Council and specifications as well as financing and operating arrangements must be approved by the Corporation. In 1973, 81 NHA loans were approved to entrepreneurs and other private borrowers for a total of \$70.1 million. This provided 4,864 housing units for individuals and families of low- and moderate-income. These figures include eight loans amounting to \$1.5 million made to Indian bands for 119

Dwelling starts, by principal source of financing, 1960-73



Source: Central Mortgage and Housing Corporation.

housing units on reserves. These loans were made under the 1970 agreement between the Corporation and the Department of Indian Affairs and Northern Development which provides for a form of loan guarantee by the Minister. Since the agreement came into effect 26 loans have been made.

Long-term loans are available to a province, a municipality or their agencies, a hospital, school board, university or college, co-operative association or charitable corporation for construction of student housing projects, or to acquire existing buildings and convert them into student residences. In all cases the government of the province concerned must approve the loan. CMHC may lend up to 90% of the project cost subject to maximum amounts of \$30,000 for a single dwelling unit, \$20,000 for a self-contained apartment and \$8,000 for each student housed in dormitory or hostel accommodation. The term of the loan may not exceed 50 years or the existing life of the building, whichever is less. The interest rate is prescribed by the Governor in Council. During 1973 six loans amounting to \$3.8 million were approved, to provide accommodation for 523 students. This brought to 336 the number of student housing loans approved during the 12 years this legislation has been in effect, and a total of \$434 million loaned. Altogether 67,965 single and 7,092 married students and their families have been accommodated under this program.

Insured loans. Insured mortgage loans may be made for both home-ownership and for rental housing. They are normally available from approved lenders to individual home-owner applicants, to builders constructing houses for sale or rent and for some special groups such as co-operative housing associations and farmers. Insured loans are also available for the purchase, improvement, re-financing or sale of existing dwellings. The conditions governing NHA loans are contained in National Housing Loan Regulations.

Upon application the borrower pays CMHC a fee of \$35 a unit to help defray the costs of examining plans and specifications, determining lending values and conducting compliance inspections during construction. An approved lender requires evidence that a home-owner or

home-purchaser is providing at least 5% of the value of the house from his own resources. For the home-owner this equity may be in the form of cash or a combination of cash, land and labour; for the home-purchaser it may be in cash or labour. The regulations require that gross debt service — the ratio of repayments of principal and interest plus municipal taxes to the income of the borrower — should not exceed 30%, but higher ratios may be considered on their merits. The borrower pays an insurance fee which is added to the amount of the loan and is repaid over the term of the mortgage. The fee ranges from seven eighths of 1% to 1.25% of the loan, according to type of unit and timing of mortgage advances. The NHA interest rate is free to find its own level in relation to the open market.

In 1973, loans for new housing, including condominiums, were allowed for up to 95% of value. For open market rental accommodation the ratio was up to 90%. The loan maximum for new and existing single-family units to be held under freehold, leasehold or condominium tenure and condominium types in apartment form was \$30,000; for rental accommodation, single-family units \$30,000 a unit, for multiple-unit apartments \$20,000 a unit, and for hostels and dormitories \$10,000 a person accommodated. The period of repayment could extend up to 40 years for new home-ownership and rental housing. For existing housing this period was the lesser of 40 years or the remaining life of the building.

In June 1974, loan maximums for home-ownership were set by CMHC on a national, regional or local basis. They vary from \$30,000 to \$40,000 and cover 95% of the first \$31,850 of lending value plus 75% of the balance up to the applicable maximum. For rental accommodation maximum loan levels are: single-family dwellings \$30,000, apartments \$20,000 a unit, hostel beds \$10,000 and student hostels \$8,000 a person accommodated. Maximum loan levels are reviewed quarterly by CMHC. The period of repayment may be up to 40 years for new home-ownership and rental housing. For existing housing this period is the lesser of 40 years or the remaining life of the building.

The investment of \$1.4 billion by the approved lenders for new construction in 1973 was 17.7% below the \$1.7 billion invested in 1972. Loans made in 1973 involved 70,422 units and 4,204 hostel beds, a decrease of 28.2% from the 98,993 units and 4,936 hostel beds financed a year earlier. This decrease in investment by approved lenders is the result of loans to merchant builders dropping by 13,621 units, rental loans being up by 11,196 units, and home-owner loans having decreased by 28,571 units. Approved lenders increased their financing of existing housing from 20,882 units in 1972 to 22,666 units in 1973.

Home improvement loans. CMHC is authorized to give a limited guarantee to chartered banks or approved instalment credit agencies in return for an insurance fee paid by the borrower on loans made for additions, repairs and alterations to existing houses and apartments. A home improvement loan and the balance owing on any existing NHA home improvement loan on the property may not exceed \$4,000 for a one-family dwelling or \$4,000 for the first unit of a duplex, semi-detached or multiple-family dwelling, plus \$1,500 for each additional unit. Loans are repayable in monthly instalments over a period not exceeding 10 years. The maximum rate of interest is restricted to 2.25% above the long-term government bond rate adjusted quarterly to the nearest one eighth of 1%. In 1973 chartered banks and approved instalment credit agencies granted 5,861 loans for home improvement totalling \$16.2 million, compared to 7,434 loans amounting to \$19 million in 1972. These lenders reported \$24 million as the outstanding debt on these loans at the end of 1973.

Non-NHA mortgage financing. Conventional and other forms of financing in 1973 grossed \$5.04 billion for 250,879 units as compared to \$2.80 billion for 175,151 units in 1972.

14.2.2 Neighbourhood improvement, residential rehabilitation and urban renewal

Neighbourhood improvement. The Neighbourhood Improvement Program (NIP) authorizes the Corporation to make contributions and loans to municipalities or their agencies to improve the amenities of older run-down neighbourhoods and the housing and living conditions of the residents. It is intended that rehabilitation of the existing housing stock, for which assistance is available under the Residential Rehabilitation Assistance Program, should be an integral part of any project undertaken through NIP.

The Program is operated on the basis of annual agreements with the provinces which set out the criteria whereby municipalities and neighbourhoods may participate. In general, however, it is expected that participating neighbourhoods will have the following charac-

teristics: they will be predominantly residential although they may contain local stores, schools, banks, churches, small businesses and perhaps some non-conforming uses of land; a significant proportion of the existing housing stock will be in need of improvement and repair to comply with minimum standards of health and safety; most of the housing in the neighbourhood will be occupied by people of low- to moderate-income and the existing social and recreational amenities will be considered inadequate.

The agreements also prescribe the allocation of funds to the provinces for re-allocation to municipalities selected by the province and accepted by the Corporation. Municipalities will, in turn, select neighbourhoods for participation in the program. During 1973 agreements were signed with three provinces providing a total of \$36 million in contributions and loans. All three agreements cover the period ending December 31, 1974.

Site clearance. The Site Clearance Program allows the Corporation to make contributions and loans to, or for the benefit of, municipalities to acquire and demolish properties outside Neighbourhood Improvement areas where such properties either do not meet minimum housing standards or are being used for a purpose inconsistent with the character of the area. The Program is designed to assist the efforts of municipalities to enforce uniform minimum standards for existing residential buildings. Land, after acquisition and clearance, is to be used for housing, recreational or social facilities. The Site Clearance Program is also operated through annual agreements with the provinces. The agreements made with the various provinces in 1973 for the Neighbourhood Improvement Program include provision for the Site Clearance Program.

Assistance is also available for the clearance of small pockets of substandard residential and/or non-residential buildings in a community that does not require the assistance procedure of NIP. The assistance involves both federal loans and grants. To qualify, the sum of acquisition and demolition costs of contiguous properties must not exceed \$500,000.

Residential rehabilitation. Loans of up to \$5,000 are available from CMHC to assist in the improvement and repair of substandard dwellings. This assistance is available to home-owners earning \$11,000 a year or less, landlords who agree to rent controls, and non-profit corporations and co-operatives. The program applies in areas participating in NIP, other areas through special agreements with provinces and to non-profit corporations and non-profit co-operatives in any area. Priority is given to repair of the housing structure and upgrading of the plumbing, electrical and heating systems. The nature and quality of repair work should extend the useful life of the property for about 15 years. Non-profit corporations are eligible for the same assistance as landlords for the repair of family housing units. In addition these corporations may use the assistance for the conversion of existing residential buildings into a greater number of family housing units or into accommodation of the hostel or dormitory type. The funds may also be used to increase the accommodation available in an existing hostel or dormitory. Loans under this program are conditional on the province or municipality adopting and enforcing appropriate occupancy and maintenance standards to ensure that the property will not fall into disrepair again.

During 1973 three urban renewal areas in Newfoundland and six in Ontario were given this assistance. Two neighbourhoods in Alberta were selected pursuant to the Neighbourhood Improvement Program in that province and therefore qualified for rehabilitation assistance.

Urban renewal. Since August 1969 no new programs have been established under the urban renewal provisions of the National Housing Act.

14.2.3 Community housing

Co-operatives. Co-operatives are considered to be associations of people, usually incorporated, who group together for a mutual undertaking and agree to take on certain responsibilities and follow certain rules. Co-operative associations for housing are incorporated under provincial legislation. The number of members required to obtain a charter to start a co-operative varies from one province to another, usually between five and seven. Some provinces have special regulations for housing groups. A group of people must be incorporated to obtain a loan under the NHA but incorporation is not necessary to apply to CMHC for start-up funds for a co-operative project. Generally the terms and assistance available to individuals under the Act are also available to groups which are organized in co-operatives. Loans may be obtained

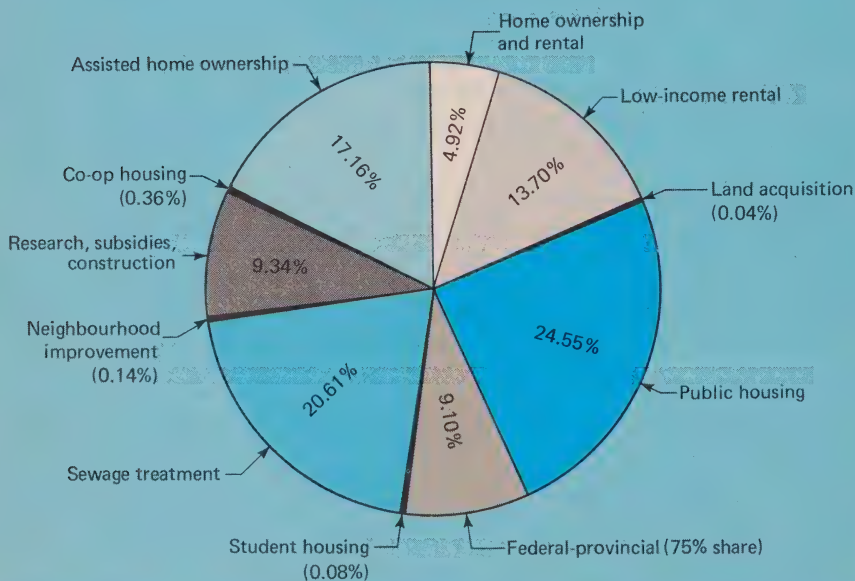
for the purchase of existing housing and for the rehabilitation of such housing if necessary. Previously loans for co-operative projects were limited to new buildings.

Co-operative housing is a general term applying to various forms of housing constructed or purchased by groups of people organized to secure housing to be owned by those who occupy it. In Canada two forms of co-operative housing are now generally known and provided for in the NHA: building co-operatives and continuing co-operatives. The former is made up of a group of people, usually numbering about five to 15, organized to construct houses which they will own individually. The continuing co-operative differs mainly in the form of ownership: the housing continues to be owned indefinitely by all members jointly. This kind of co-operative is usually organized to provide some form of multiple housing and the number of members is ordinarily larger — 25, 50 or more.

A building co-operative organized to construct houses to be owned individually by the members on completion may qualify for loan and grant assistance under the Assisted Home-Ownership Program if the incomes of the members meet the requirements of the Program. A continuing housing co-operative providing accommodation for low-income members may be eligible, under various provisions of the NHA, for start-up funds, for a 100% loan and a 10% contribution if it is a non-profit co-operative, for a loan under the terms and conditions of the Assisted Home-Ownership Program or for loans and grants under the Residential Rehabilitation Assistance Program.

Non-profit. A new Section of the National Housing Act is designed to make it easier for non-profit housing organizations to develop housing projects. The legislation gives increased assistance to groups willing to take the initiative in producing housing for people of limited means, particularly the elderly and the handicapped. A non-profit organization is one in which no part of the income is payable or otherwise available for the personal benefit of any proprietor, member or shareholder. Non-profit organizations may be provincially-municipally owned or constituted exclusively for charitable purposes. The latter group is eligible for start-up funds,

CMHC commitments under the NHA, 1973



Source: Central Mortgage and Housing Corporation.

not exceeding \$10,000 to ensure that the group is able to properly prepare a loan application to CMHC and to cover expenditures for research and organization, incorporation, site selection, options, professional fees and the technical skills required to put the project in place, selection of tenants and other costs.

Both categories of non-profit borrowers may apply to CMHC for a contribution not exceeding 10% of the cost of the project as estimated by CMHC at the time of application, less any forgivable federal residential rehabilitation loan or federal grants such as those made under the Local Initiatives Program or by the Department of National Revenue in the form of tax refunds. The cost may include both real estate and hard furnishings of the sort used in community buildings for social and recreational purposes. In the case of hostels, hard furnishings would include built-in and non-movable furniture and equipment.

Non-profit organizations formed exclusively for charitable purposes and those which are municipally owned may obtain loans to cover 100% of lending value. In the case of the provincial non-profit organizations, loans to the value of 95% of the lending value are available, with the borrower providing the other 5%. In all cases the 10% contribution from CMHC must be applied against the reduction of the loan. Income limitations will not be imposed on projects sponsored by non-profit organizations which cater to special disadvantaged groups such as the physically and mentally handicapped, the elderly and others whose housing choices in the market are extremely limited. In projects sponsored by non-profit organizations for clients with no special physical or mental disadvantages, income limitations may be required.

In 1973 loans were made to non-profit organizations for 4,314 dwelling units and 4,210 hostel beds for a total of \$95.1 million. The corresponding total for the previous year was \$42.9 million. Loans committed to non-profit organizations during the year supported the provision of low-rent accommodation for the elderly, low-income families and special groups. Included in the special groups category is housing for the mentally retarded, physically handicapped, halfway houses for persons recovering from alcohol addiction, and receiving homes for children who are wards of the courts.

A new Section of the Act provides for loans to co-operatives to be made using the terms of the Assisted Home-Ownership Program and, if incorporated as a non-profit organization, Non-Profit Housing Assistance. Loans were made for \$7.6 million to provide 414 housing units, including an estimated contribution of \$700,000 to non-profit continuing co-operative associations.

Start-up funds. The NHA also provides for start-up funds not exceeding \$10,000 to be granted to sponsors of non-profit housing projects. To the end of 1973, a total of \$343,000 had been approved for 67 sponsors of non-profit housing projects.

14.2.4 Municipal infrastructure

Since December 1960 the NHA has made funds available to assist in the elimination or prevention of water and soil pollution. CMHC is authorized to make a loan to a province, municipality or municipal sewerage corporation to construct or expand sewage treatment facilities. The loan may not exceed two thirds of the cost of the project and the maximum repayment term is 50 years from date of completion. Interest is set by the Governor in Council. Agreements covering such projects contain a "forgiveness" clause applicable to both the principal of the loan and accrued interest conditional on satisfactory completion by March 31, 1975. If construction is not complete by that date, 25% of the loan advanced or warrantable by construction progress, plus 25% of the accrued interest on advances may be forgiven.

Loans for municipal sewage treatment projects during 1973 were greater than any previous year since the commencement of the program in 1960. As has been the case in the preceding three years, a share of the annual budget was allotted to each province and each undertook to establish priorities among the applications submitted by its municipalities. Ontario made the greatest use of the available funds with 294 loans totalling \$153.8 million approved in 1973, compared to 261 loans and \$97.2 million in 1972 and 215 loans and \$76.7 million in 1971.

14.2.5 Public housing

Under the NHA and complementary provincial legislation the federal and provincial governments may enter into partnership agreements to build rental housing for families and individuals with low incomes or to purchase and rehabilitate existing housing for this purpose.

Hostel or dormitory accommodation may also be included. The federal government pays up to 75% of the capital costs and the provincial government the remainder, although the latter may call upon the municipality concerned to bear a portion of the provincial share. Rents for units in federal-provincial projects are related to the tenant's family income and size of family. Operating deficits are shared on the same contractual basis as the capital costs.

As an alternative CMHC may make long-term loans to a province, or to a municipality or public housing agency with the approval of the province, to provide public housing. Projects may consist of new construction or the renovation of existing buildings and include dormitory and hostel accommodation as well as self-contained family units. Loans may be up to 90% of the total cost as determined by CMHC and for a term as long as 50 years, but not in excess of the useful life of the development. The maximum that may be borrowed for a fully-serviced apartment is \$20,000, and for hostels \$10,000 for each person accommodated. For a house the maximum is \$30,000. In addition 15% of the maximum may be provided as an additional loan for added amenities which go beyond strictly residential use. The interest rate is set by the Governor in Council. If this alternative is selected federal grants may be made covering up to 50% of losses incurred in the operation of public housing projects for a period not exceeding the term of the loan. Annual subsidies are shared by CMHC and the province concerned.

During 1973 loans totalling \$199.7 million were approved to provide 14,114 public housing units and 14 hostel beds. This covered 90% of the cost of construction or acquisition of the units. Comparable figures for 1972 are 12,447 units, six beds and \$179 million. Under the federal-provincial cost-sharing arrangements a further \$51.8 million was approved for 3,327 housing units as compared to 1,875 units and \$27.7 million for 1972. The federal government may share in the operating deficits of public housing projects equally under the loan arrangement and accept 75% of the costs under the partnership arrangement. The federal share of subsidy payments for the 101,900 units occupied at the end of 1973 is estimated to be \$68.5 million for the year.

Provinces, municipalities or their agencies may enter into agreements with the owners of private accommodation under which the latter agree to rent to low-income families at rentals based on income. The federal government provides 50% of the difference between the subsidized rent paid by the tenant and the full market rent normally charged by the owner. Under this agreement, approval has been given for 5,331 units in Ontario, 141 units in Manitoba, 114 units in New Brunswick and 317 units in Prince Edward Island.

While the federal-provincial cost-sharing provisions of the Act permit the construction of housing for rent or for sale, assistance has been directed primarily toward providing subsidized rental accommodation. However, three different experimental sales programs are also under way. In Ontario a sales program has been initiated in 15 municipalities to allow tenants in about 1,670 non-subsidized rental units the opportunity to purchase their homes. Nova Scotia, Prince Edward Island and New Brunswick continue to use this Section of the Act to assist co-operatives to build houses for sale and, during 1973, 320 units were approved for construction and sale to members of co-operatives for a total of 5,664 units sold to date. Section 40 of the Act is also used to provide subsidized home-ownership in Nova Scotia, Manitoba, Saskatchewan and British Columbia, and negotiations are under way in Newfoundland. In the subsidy program the purchasers are required to make mortgage payments related to their incomes. The sale of a total of 172 units was approved in 1973 under the program.

14.2.6 Land assembly and new communities

The federal and provincial governments may enter into an agreement to provide for a land assembly project which involves the development of land for housing. The federal government pays up to 75% of the cost and the provincial government the remainder. The latter may call upon the municipality concerned to bear a portion of the provincial share. As an alternative loans of up to 90% of the cost of assembling and servicing land for public housing are available at a preferential interest rate to provinces, municipalities and their agencies.

Under federal-provincial partnerships 10 projects for residential building lots and five projects for land banks with a total area of 1,627 acres were approved in 1973. Since the inception of the program in 1948, 31,825 lots have been authorized for development. Of these 23,261 have been offered for sale and 21,548 have been sold. A total of 32,862 acres have been authorized for acquisition and 18,653 acres remain in land banks. A total of 108 loans amounting to \$39.7 million had been approved by year end.

The NHA also provides assistance through CMHC for new communities either through cost-sharing arrangements between federal and provincial governments or through loans with certain forgiveness elements to the provinces or their designated agencies. CMHC may participate in the acquisition of land for the new communities, including land for transportation corridors and open space in or around the communities, planning the communities and designing and installing services. Both the federal commitment to the loan arrangement and the federal-provincial cost-sharing agreement are dependent upon the province satisfying several points: the agency or corporation responsible for the planning and development of the new community must be designated, and CMHC must be satisfied that measures will be taken to allow the public to receive any economic benefits that may accrue from selling the lands and services to the private sector in the new community, and that acceptable plans for urban growth, including the location, size and order of development of other new communities, have been established. A federal-provincial agreement between CMHC and the government of any province will determine which new community will receive assistance.

The amount of capital costs, profits and losses to be shared by the Corporation shall not exceed 75% of the total capital costs, profits and losses of the project. A loan to a province or its designated agency may be made in an amount of 90% of the cost as determined by CMHC for the acquisition of land for the new communities, including land for transportation corridors and open spaces in or around the communities, for planning the communities, and for the design and installation of the services. The term of the loan will be 25 years. This term may be extended to 50 years for that part to be used for land and services leased on a long-term leasehold basis for private use.

To encourage the rapid development of recreational and social facilities CMHC may forgive up to 50% of that portion of the loan covering acquisition of land for these purposes. A forgiveness of an amount not exceeding 50% of the part of the loan used for initial planning costs may also be approved. This would include salaries, accommodation and expenses of the new community development corporation or agency and necessary consultants to provide over-all administration, site investigations, surveys, background research, concept plans, over-all development plans as may be required by the province and detailed phasing elements of layout and urban design.

14.2.7 Mortgage administration

The NHA mortgage debt outstanding at the end of 1973 amounted to \$14.2 billion, representing 32.1% of the mortgage debt in Canada. With a portfolio of over \$5.6 billion, CMHC continued to hold the largest single share of the mortgage debt. The chartered banks held \$2.8 billion, life insurance companies held \$2.2 billion and other approved lenders held \$2 billion. The remainder was held by pension funds and purchasers in the secondary mortgage market. In 1973 sales of insured mortgages by approved lenders totalled \$402.6 million. Of this amount \$50.9 million was purchased by various pension funds. The number of NHA loans in arrears decreased in 1973. As at December 31, 1973 there were 2,527 loans (0.34% of mortgages outstanding) in arrears for three months or more compared with 2,807 loans (0.37%) a year earlier. During 1973 the Mortgage Insurance Fund paid \$40 million on 1,165 claims, representing 0.4% of the \$11.1 billion insured mortgages outstanding. Such payments for 1973 exceeded the previous record high year of 1972 and were again primarily attributable to the number of multiple housing project acquisitions. Arrears on all Corporation-owned property as at December 31, 1973 totalled 233 accounts, 2.1% of the total number of rental units. The vacancy rate at December 31, 1973 was 13.1% of the total number of rental units.

14.3 Dwellings and household facilities

Over the past 30 years decennial censuses of Canada have provided a comprehensive inventory of the nation's dwelling stock in the form of a complete housing census taken in conjunction with the censuses of population and agriculture. Detailed information on this subject covering the 1941-71 period may be found in the relevant census volumes and reports. Summary data from the 1971 Census included here relate to a selection of the housing characteristics for which data were collected. More detailed information on these characteristics, including cross-classifications of the data, may be obtained from the User Inquiry Service of Census Field, Statistics Canada.

14.3.1 Recent trends

The 1971 Census recorded a total of 6 million occupied dwellings in Canada. (A dwelling, for census purposes, is a structurally separate set of living quarters with a private entrance either from outside the building or from a common hall or stairway inside.) This total represented a 32.5% increase in dwellings since the 1961 Census compared to an increase in population of 18.2%. It is apparent that, despite slower population growth resulting from declining birth rates and lower immigration, the need for dwellings has continued to increase at a rate comparable to the record growth rates of the 1950s. This is attributable largely to the increased rate of family formation as children of the postwar "baby boom" reached working and marriageable age, and to the establishment of increasing numbers of one- and two-person households in both younger and older age groups.

These trends in housing growth rates, including comparisons over the past 20 years for such characteristics as type of dwelling, tenure, and number of rooms are summarized in Table 14.3.

14.3.2 Dwelling types, tenure and size

Dwelling types. Single detached homes continued to be the predominant type of housing accommodation in Canada in 1971, although their relative numbers have gradually declined in favour of multiple-type dwellings. Twenty years earlier, at the 1951 Census, two thirds of all dwellings were single detached but this ratio gradually dropped to 59.5% by 1971. In the 1961-71 period single detached homes increased by 20.6%, whereas multiple-type units, i.e. single attached (double and row houses), apartments, flats, etc., grew at the significantly higher rate of 52.9%.

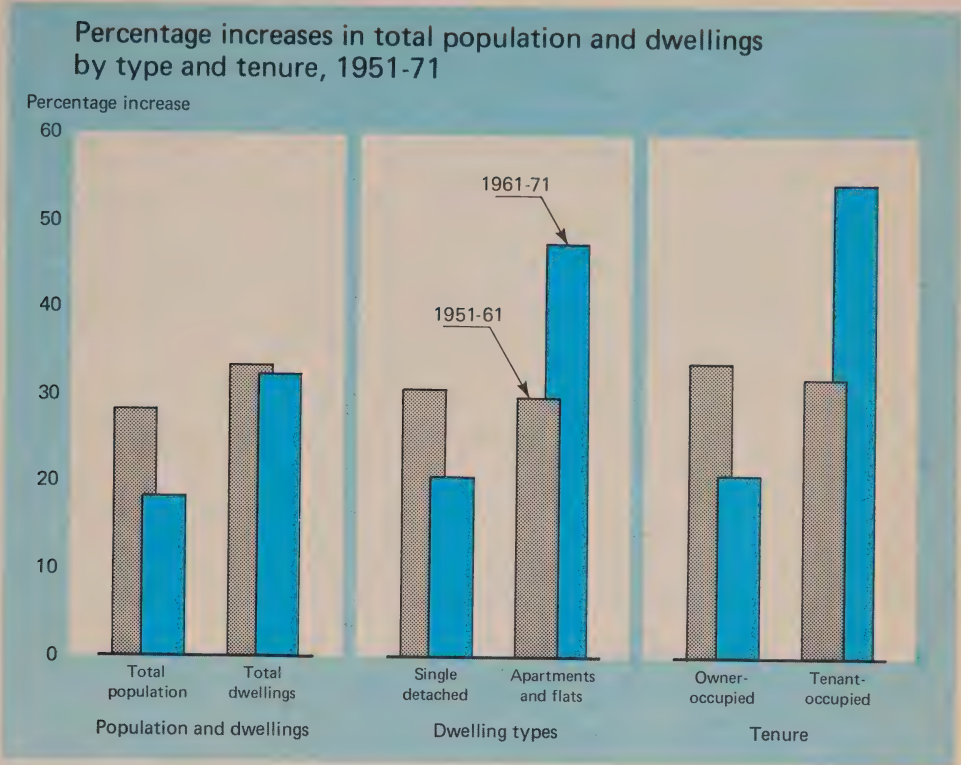
Table 14.4 shows the distribution of the two broad dwelling-type classes in 1971 by province and by metropolitan area. Saskatchewan had the largest proportion of single detached homes, 81.5% of its occupied dwellings being in this category. Almost 60% of Quebec's dwellings were multiple-type units (apartments, single attached, etc.), and only 40% were single detached, by far the lowest proportion among the provinces. The distribution within the major metropolitan centres reflected these provincial ratios in general terms, except that in most cases the proportions of multiple-unit dwelling types were considerably higher than for the province as a whole. This was particularly evident in Montreal and Toronto, where only 23.7% and 45.9%, respectively, of all occupied dwellings were single detached homes.

Tenure. The recent trend toward apartment living and higher density accommodation has resulted in a significant increase in the number of rented dwellings (from 34.0% of all dwellings in 1961 to 39.7% in 1971), reversing an earlier trend which had seen the rate of home-ownership increase steadily from 56.7% of all homes in 1941 to 66.0% in 1961.

As in the case of dwelling types, there was considerable variation among provinces in the proportions of owned dwellings in 1971, ranging from a low of 47.4% in Quebec to a high of 80.0% in Newfoundland. Table 14.5 shows that the swing toward tenant occupancy in the 1961-71 period was characteristic of all provinces, and at a fairly uniform rate. However, the trend was less marked in New Brunswick and Quebec, where the decline in the percentage of home-owners between 1961 and 1971 was not as sharp as in the other provinces.

Home-ownership is a characteristic which varies greatly between rural and urban areas and is generally in inverse ratio to the size of the community. For example, in the very large urban agglomerations of 500,000 population and over, only 46.1% of all dwellings were owner-occupied in 1971, compared with 63.2% for the urban size-groups under 100,000 population and 82.0% in rural areas. Among the various census metropolitan areas, the eastern centres of Halifax, Saint John, Montreal, Quebec and Ottawa—Hull showed the lowest percentages of home-ownership and the highest tenancy rates.

Dwelling size. Despite the high increase in apartment rental accommodation during the 1961-71 decade as compared to owner-occupied single homes, the average size of Canadian dwellings showed a slight increase from 5.3 to 5.4 rooms. Not all provinces followed this pattern, however, and, as Table 14.6 shows, there was a decline in the average number of rooms per dwelling in all provinces east of Ontario, with increases in Ontario and throughout the West. Throughout the nation as a whole, Prince Edward Island had the highest average in 1971 at 6.1 rooms per dwelling, and the Yukon Territory and Northwest Territories the lowest at 4.3. A "crowded" dwelling, for census purposes, is considered to be any dwelling in which



the number of persons exceeds the number of rooms. Using this rough measure, the number of crowded dwellings decreased by 24.2% in the decade between 1961 and 1971. Perhaps even more significant is the fact that the number of crowded dwellings fell from 16.5% of the total housing stock in 1961 to only 9.4% in 1971. This dramatic improvement, which was only slightly apparent in the 1951-61 period, appears to result from both a decline in the average number of persons in a household and an increase in the average number of rooms in a dwelling, with the former likely exerting the greater influence.

Provincially, the smallest proportions of crowded dwellings in relation to total housing stock were in Ontario and British Columbia, where only 6.8% of all dwellings had less than one room per person in 1971. The largest proportions were in the Atlantic Provinces and Quebec, ranging from 12.4% in Nova Scotia and Quebec to 23.6% in Newfoundland.

14.3.3 Period of construction and length of occupancy

Period of construction. Figures from the 1971 Census for occupied dwellings indicate that 28.8% of the occupied housing stock was built after 1960. Consistent with the increase in rented dwellings since 1961, the proportion of rented dwellings in 1971 which were built after 1960 was 34.0%, compared to 25.4% for owned dwellings. The proportion of dwellings built after 1960 was particularly low in rural farm areas, at 11.6%.

Table 14.7 shows the percentage distribution in 1971 of period of construction by province and by census metropolitan area. There were significant variations from province to province in the proportion of new dwellings. The lowest percentages of dwellings built after 1960 were found in the Atlantic Provinces, Prince Edward Island having the lowest at 19.0%. Newfoundland was an exception, however, its 28.6% being close to the national average. Figures above the national average were found only in Alberta, British Columbia, and the Yukon Territory and Northwest Territories, which reported, respectively, 34.5%, 35.3%, and 58.4% of dwellings built after 1960. Values for census metropolitan areas ranged from 19.3% for Windsor to 40.9% for Edmonton.

Length of occupancy. The 1971 Census data on length of occupancy of household heads, displayed in Table 14.7, provide an indication of the mobility of Canadians. Of all household heads in 1971, 66.8% had lived for 10 years or less in the dwelling in which they were enumerated, and 17.8% for less than one year. These figures do not differ drastically from the 68.6% and 15.3% respectively recorded in 1961. Length of occupancy was greatest in rural farm areas, where 65.6% of household heads had occupied the same dwelling for more than 10 years.

The pattern of provincial variation for length of occupancy was similar to that for period of construction. The proportion of household heads occupying their present dwelling for 10 years or less was lowest in the Maritimes, ranging from 50.3% in Prince Edward Island to 55.0% in New Brunswick. The highest percentages were 70.6% in Alberta, 74.1% in British Columbia, and 90.7% in the Yukon Territory and Northwest Territories. For census metropolitan areas the range extended from 59.5% for Windsor to 76.1% for Calgary and 76.2% for Edmonton. Fully 25.7% of household heads in Calgary had occupied the dwelling in which they were enumerated in 1971 for less than one year.

14.3.4 Values, rents and mortgages

Values. The 1971 Census required householders in owner-occupied non-farm dwellings to estimate the market value of their homes. Table 14.8 presents median values of single detached dwellings by province and by metropolitan area. The 1971 median value of \$19,020 represented a 72.6% increase over the \$11,021 in 1961. The median value in rural areas was \$10,310, compared to \$26,902 for urban centres with populations of 500,000 and over.

Median values in the provinces ranged from \$7,828 in Newfoundland to \$23,768 in Ontario. The Maritime Provinces also showed extremely low values, as did the Yukon Territory and Northwest Territories. Only Alberta and British Columbia joined Ontario in having median dwelling values above the national figure. Among the census metropolitan areas, Chicoutimi—Jonquière's median value of \$15,489 was the lowest. Toronto's at \$32,408 was highest followed by Vancouver where the median value was \$26,702.

Rents. The monthly cash rent paid was reported for tenant-occupied non-farm dwellings in the 1971 Census, and the national average at that time was situated at \$110. This was 69.2% higher than the \$65 average in 1961. The average rent recorded in rural areas, \$71, was much lower than the \$122 in urban agglomerations of 500,000 population and over.

Table 14.8 shows average cash rent by province and by metropolitan area. Among the provinces, Prince Edward Island had the lowest rents, averaging \$86, while Ontario's average of \$129 was the highest. As was the case for median dwelling values, only Alberta and British Columbia along with Ontario were above the national average. Again, like dwelling values, Toronto had the highest average cash rent among the census metropolitan areas, \$151, while Chicoutimi—Jonquière shared last place with Saint John, both showing an average cash rent of \$83.

Mortgages. Householders in owner-occupied non-farm dwellings in the 1971 Census were asked if there were one or more mortgages on their dwelling, and the type of holder of the first mortgage. These data, like those on dwelling values, were tabulated for single detached dwellings. Table 14.8 shows the percentage of mortgaged dwellings by province and by metropolitan area.

In 1971, 52.8% of single detached owner-occupied non-farm dwellings were mortgaged, compared to 45.6% in 1961. The proportion was only 32.4% in rural areas, compared to 66.4% in the largest urban centres. For the mortgaged dwellings, the holder of the first mortgage was a bank or an insurance, loan, trust or mortgage company in 62.6% of the cases. The first mortgage was held by a private individual 19.4% of the time and by government only 9.8% of the time.

There was considerable variation from province to province in the proportion of mortgaged dwellings. Newfoundland had by far the lowest proportion, 17.4%, while Alberta led with 59.1%. Among census metropolitan areas the extremes were registered by St. John's (45.5%) and Montreal (75.5%).

14.3.5 Heating fuel

In view of world energy shortages, census data on home heating fuels are of particular interest. The 1971 Census data show that 57.1% of occupied Canadian dwellings were heated

principally by oil or other liquid fuels, while 32.1% used gas as the main heating fuel. The major change since 1961 was a strong increase in the proportion of dwellings heated by gas, from 18.8% to 32.1%. This was offset by a correspondingly large decrease, from 10.6% to just 1.1%, in the proportion of dwellings using coal or coke as the main heating fuel. The category "other fuels" declined from 14.3% to 9.8% as a result of an increase from 0.7% to 5.8% in the proportion of dwellings which were electrically heated and a decrease from 13.0% to 3.5% in the proportion of dwellings heated by wood. The use of gas as a heating fuel was less predominant in rural areas, 13.4% compared to 37.2% in urban areas.

Table 14.9 gives the percentage distribution of dwellings by principal heating fuel, by province and by metropolitan area. There was a sharp difference between Quebec and Ontario in the proportions of dwellings heated principally by oil and by gas. In Quebec and the Atlantic Provinces the proportion using gas as fuel was never higher than 8.0% (Quebec), while the proportion using oil was 79.3% or higher in all cases. In Ontario and the western provinces the proportion using gas was never lower than 37.1% (Ontario) and went as high as 83.6% for Alberta, while the proportion using oil was never above 54.0% and was as low as 9.4% in Alberta. Among census metropolitan areas, Victoria was an exception to this east-west rule, its 2.4% of dwellings heated principally by gas being one of the lowest proportions in the country.

14.3.6 Household facilities and equipment

Census data. Decennial censuses provide an inventory of a variety of household facilities and equipment to measure advances in living standards and to provide data for market research. The 1971 Census covered items such as plumbing and sanitary facilities, heating equipment, and accessories such as refrigerators, freezers, dishwashers, clothes dryers and television sets. Only the data on the first of these subjects, i.e. the incidence of homes with running water, bath and toilet facilities, are shown by province in Table 14.10. More recent information on other items is available from annual sample surveys (see below).

Continuing the rising trend in recent decades, there was again a marked improvement in the number of dwellings equipped with plumbing and sanitary facilities during the 1961-71 period. Dwellings with running water increased from 89.1% of all dwellings in 1961 to 96.1% in 1971. Similarly, households reporting a bath or shower for their exclusive use advanced from 77.1% to 90.8%, and households with exclusive use of a flush toilet from 79.0% to 93.1%.

Although nine of every 10 Canadian dwellings were supplied with these amenities in 1971, in rural localities the ratios were considerably lower than the national percentages. Table 14.10 shows that in rural areas of the Prairie Provinces, for example, one of every three dwellings still lacked running water and installed bath or shower facilities, and closer to one of every two lacked a flush toilet. Rural Newfoundland showed similar ratios, but in the Yukon Territory and Northwest Territories only about one rural dwelling in every three was equipped with these facilities.

Annual estimates. Table 14.11 presents some summary statistics derived from the latest in a series of annual sample surveys conducted by Statistics Canada. The survey was carried out in conjunction with the April 1973 labour force survey and about 30,000 households, chosen by area sampling methods, were included in the sample. Unlike decennial censuses, the sample survey cannot produce data for the smaller localities and areas, but much of the information shown in Table 14.11 for Canada is available also by individual provinces and metropolitan areas. Moreover, a much wider range of household facilities and equipment items is covered in the annual survey than can be accommodated in a general census.

Table 14.11 shows that, for the second consecutive year, possession of colour television sets and FM radios by Canadian households increased more than any other household facilities. Between May 1972 and April 1973, households with colour TV sets increased to 33.2% of the total from 24.2% while possession of black and white TV sets decreased to 79.2% compared to 83.8% a year earlier. During the same period, ownership of FM radios increased 4.8% to reach a level of 67.2%.

In 1973, data were collected for the first time on the incidence of vacation homes which were reported by only 7.2%. At the other end of the scale, several items of equipment now appear to be present in almost all Canadian households: electric refrigerators were reported in 98.6%; telephones in 95.0%; radios in 97.7%; and TV sets in 96.0%.

14.4 Construction

14.4.1 Value of construction work

The data on the construction industry represent the estimated total value of all new and repair construction performed by contractors and by the labour forces of utility, manufacturing, mining and logging firms, government departments, home-owner builders and other persons or firms not primarily engaged in the construction industry. Table 14.12 shows the value of new and repair construction work and Table 14.13 the value of such work performed by contractors and others during the period 1969-71, preliminary expenditures for 1972 and intentions for 1973. Table 14.14 gives estimates of total expenditures in Canada on each type of construction for which information is available.

Principal statistics of the construction industry are shown by province and for contractors, utilities, governments and others in Table 14.15. The statistics given for Canada as a whole may be considered as relatively accurate but those for individual provinces and by class of builder are approximations only. All estimates given for cost of materials used are based on ratios of this item to total value of work performed, derived from annual surveys of construction work performed by contractors and others and applied to the total value-of-work figures. Estimates of labour content are similarly based but, in addition, are adjusted to include working owners and partners and their withdrawals. Although the ratios were calculated in some detail by type of industry, still further refinements are required. There are also some difficulties in obtaining the precise location of projects undertaken or to be undertaken by large companies operating in a number of provinces. However, if used with these qualifications in mind, the Table provides useful estimates.

Chapter 21 includes detailed price index numbers of construction and capital goods, which measure price changes in residential and non-residential building materials and changes in construction wage rates; price indexes of highway construction which show annual costs to provincial governments in contracts awarded for highway construction as a percentage of prices paid in 1961; and price indexes of electrical utility construction (distribution systems, transmission lines, transformer stations) which provide an estimate of the impact of price change on the cost of materials, labour and equipment used in constructing and equipping such utilities.

14.4.2 Building permits issued

The estimated value of proposed construction is indicated by the value of building permits issued. Figures of building permits are collected from approximately 1,500 municipalities across the country and are available for individual municipalities, for metropolitan areas, for provinces and for economic areas in Quebec, Ontario and Manitoba.

The total value of permits issued for building construction in 1973 was \$8,558.9 million, a figure 32.4% higher than in 1972. Residential construction value and over-all non-residential construction value increased by 30.9% and 34.4%, respectively, reflecting an increase of 64.0% in the industrial, 39.6% in the commercial, and 8.8% in the institutional and government construction sectors.

Permit values rose in all provinces except Manitoba which showed a slight decrease. The value of building permits issued in each province in the years 1972 and 1973 is given in Table 14.16, in each of 50 municipalities in Table 14.17 and in each of the 22 metropolitan areas in Table 14.18. These metropolitan areas made up 70.0% of the 1973 total for Canada.

14.5 Capital expenditures

A survey carried out early in 1974 of capital spending intentions of all sectors of the Canadian economy indicated that capital outlays amounting to \$30.3 billion were planned for 1974. The survey covered business establishments, educational and other institutions and governments at all levels. An estimate of outlays on new dwellings is also included in the total. The estimates for 1974 predict a pronounced acceleration of spending to one of the highest levels on record, following the rapid expansion of capital investment in 1973. Within the total, expenditures on new construction are expected to advance over 1973 levels by nearly 16% and those for the planned acquisition of machinery and equipment by 17%.

The planned 16% increase in capital expenditures in 1974 follows an expansion in 1973 of 19%. These rates of increase are substantially above comparable five- and 10-year averages of

the recent past, but are at about the pace attained during the mid-1960s. Actual investment grew annually on an average by nearly 11% for 1969-73 and 11% in 1964-68, or 11% for the decade 1964-73.

Table 14.19 shows the trend in capital spending over the years 1965-74 in both current and constant (1961) dollars. Table 14.20 summarizes capital and repair expenditures by economic sector and Table 14.21 contains details of the manufacturing, mining and utilities sectors for the years 1972-74. A summary of the capital expenditures in each province and the territories is given in Table 14.22. Such expenditures represent gross additions to the capital stock of the province or territory and are a reflection of economic activity in the area, although the actual production of these assets may generate major employment and income-giving effects in other regions. For example, the spending of millions of dollars on plants and equipment in western Canada may generate considerable activity in machinery industries in Ontario and Quebec as well as construction activity in the western provinces.

Sources

14.1 - 14.2 Central Mortgage and Housing Corporation.

14.3 Census Characteristics Division, Census Field, Statistics Canada.

14.4 - 14.5 Construction Division, Industry Statistics Branch, Statistics Canada.

Tables

..	not available	e	estimate
...	not appropriate or not applicable	p	preliminary
—	nil or zero	r	revised
--	too small to be expressed	certain tables may not add due to rounding	

14.1 Dwelling units¹ started and completed, by type of financing, 1971-73, and by region, 1972 and 1973

Year and region	Dwelling units started		Conven- tional institu- tional loans	All other financing	Total	Dwelling units completed
	National CMHC loans	Housing Act Approved lenders loans				
1971 ^r	44,366	87,802	55,625	45,860	233,653	201,232
1972 ^r	40,210	96,033	64,250	49,421	249,914	232,227
1973	32,270	75,469	93,641	67,149	268,529	246,581
1972 ^r						
Atlantic Provinces	4,073	1,991	5,385	5,053	16,502	15,000
Quebec	9,209	22,234	11,231	13,072	55,746	53,466
Ontario	13,737	43,970	30,297	14,929	102,933	96,438
Prairie Provinces	9,976	18,703	5,938	4,799	39,416	36,226
British Columbia	3,215	9,135	11,399	11,568	-35,317	31,097
1973						
Atlantic Provinces	4,101	1,601	9,815	6,405	21,922	18,837
Quebec	8,283	16,590	14,563	20,114	59,550	55,260
Ontario	11,314	38,042	41,966	19,214	110,536	98,262
Prairie Provinces	5,921	12,936	11,957	8,080	38,894	39,618
British Columbia	2,651	6,300	15,340	13,336	37,627	34,604

¹Excludes the Yukon Territory and Northwest Territories.

14.2 Dwelling units started in metropolitan areas, large urban centres and urban agglomerations, 1972 and 1973

Area (1971 Census)	Dwelling units started		Single de- tached	Semi- de- tached and duplex	Row	Apartment; other
	1972	1973				
	Total	Total				
METROPOLITAN AREAS	171,017	169,118	62,376	8,972	14,294	83,476
Calgary	7,047	6,981	4,678	422	158	1,723
Chicoutimi—Jonquière	1,425	1,581	1,078	40	—	463
Edmonton	9,500	7,384	4,643	278	750	1,713
Halifax	2,540	4,181	1,219	152	316	2,494
Hamilton	8,321	8,708	2,862	480	868	4,498
Kitchener	5,349	5,054	1,593	454	569	2,438
London	5,444	3,872	1,770	84	473	1,545
Montreal	24,731	30,700	9,412	934	834	19,520
Ottawa—Hull	14,887	15,511	3,381	419	2,245	9,466
Quebec	8,420	4,648	2,428	210	—	2,010
Regina	1,304	1,366	883	6	162	315
Saint John	1,608	1,085	630	84	106	265
St. Catharines—Niagara	4,219	3,937	2,098	403	480	956
St. John's	1,307	1,705	1,258	174	29	244
Saskatoon	877	1,342	1,057	16	—	269
Sudbury	1,685	933	515	32	91	295
Thunder Bay	1,139	1,355	598	65	21	671
Toronto	38,695	37,697	8,039	3,857	5,927	19,874
Vancouver	16,210	17,334	8,729	370	954	7,281
Victoria	4,192	4,013	1,427	46	119	2,421
Windsor	2,983	2,033	1,017	178	99	739
Winnipeg	9,134	7,698	3,061	268	93	4,276
LARGE URBAN CENTRES AND URBAN AGGLOMERATIONS	15,622	19,129	9,513	1,247	1,267	7,102
Brantford	470	1,491	403	26	203	859
Cornwall	209	571	169	22	55	325
Drummondville	323	353	178	12	—	163
Guelph	599	972	368	129	100	175
Kamloops	1,334	963	659	50	10	244
Kingston	1,144	1,634	613	36	258	727
Lethbridge	430	740	472	46	—	222
Moncton	1,399	1,583	751	84	77	671
North Bay	632	964	264	98	109	493
Oshawa	1,832	1,821	812	346	296	367
Peterborough	835	505	369	44	—	92
Prince George	1,421	1,774	1,204	46	—	524
St-Jean	518	562	316	2	—	244
St-Jérôme	...	...	...	...	...	...
Sarnia	585	894	367	38	75	414
Sault Ste Marie	632	767	626	14	—	127
Shawinigan	221	301	212	6	—	83

14.2 Dwelling units started in metropolitan areas, large urban centres and urban agglomerations, 1972 and 1973 (concluded)

Area (1971 Census)	Dwelling units started					Row	Apartment; other
	1972	1973	Single de- tached	Semi- de- tached and duplex			
LARGE URBAN CENTRES AND URBAN AGGLOMERATIONS (concluded)							
Sherbrooke	1,163	629	202	20	—	407	
Sydney/Sydney Mines	538	944	487	138	84	235	
Timmins	453	416	266	82	—	68	
Trois-Rivières	884	1,245	575	8	—	662	
Valleyfield	...	...	...	...	...	...
Other areas	63,275	80,282	59,663	3,016	1,730	15,873	
Canada ¹	249,914	268,529	131,552	13,235	17,291	106,451	

¹Excludes the Yukon Territory and Northwest Territories.**14.3 Summary of housing characteristics, censuses of 1951, 1961 and 1971**

Item		1951 ¹	1961	1971	Percentage increase	
					1951-61	1961-71
Total occupied dwellings	No.	3,409,295	4,554,493	6,034,510	33.6	32.5
	%	100.0	100.0	100.0	...	...
TYPE OF DWELLING²						
Single detached	No.	2,275,615	2,978,501	3,591,770	30.9	20.6
	%	66.7	65.4	59.5	...	...
Single attached	No.	237,655	404,933	679,590	70.4	67.8
	%	7.0	8.9	11.3	...	...
Apartments and flats	No.	885,565	1,151,098	1,699,045	30.0	47.6
	%	26.0	25.3	28.2	...	...
TENURE						
Owned	No.	2,236,955	3,005,587	3,636,925	34.4	21.0
	%	65.6	66.0	60.3	...	...
Rented	No.	1,172,340	1,548,906	2,397,585	32.1	54.8
	%	34.4	34.0	39.7	...	...
SIZE OF DWELLING						
Average rooms per dwelling	No.	5.3	5.3	5.4	...	...
Crowded dwellings ³	No.	641,820	750,942	569,495	17.0	-24.2
	%	18.8	16.5	9.4	...	...

¹Excludes the Yukon Territory and Northwest Territories.²Excludes mobile dwellings.³Dwellings in which the number of persons exceeds the number of rooms.**14.4 Type of dwelling, by province and by census metropolitan area, 1971**

Province and census metropolitan area	Total dwellings ¹	Single detached	Multiple-unit types ²	Single detached %	Multiple-unit types ³ %
PROVINCE					
Newfoundland	110,440	85,970	23,765	77.8	21.5
Prince Edward Island	27,880	21,010	6,235	75.4	22.4
Nova Scotia	207,505	148,050	54,265	71.3	26.2
New Brunswick	157,635	110,630	43,535	70.2	27.6
Quebec	1,604,785	641,665	956,560	40.0	59.6
Ontario	2,225,490	1,365,580	851,200	61.4	38.2
Manitoba	288,370	208,455	76,170	72.3	26.4
Saskatchewan	267,565	218,050	45,405	81.5	17.0
Alberta	464,615	329,600	124,205	70.9	26.7
British Columbia	667,545	454,335	193,975	68.1	29.1
Yukon Territory and Northwest Territories	12,675	8,430	3,325	66.5	26.2
Canada	6,034,505	3,591,770	2,378,635	59.5	39.4
METROPOLITAN AREA					
Calgary, Alta.	121,155	73,055	47,140	60.3	38.9
Chicoutimi—Jonquière, Que.	29,655	13,620	15,830	45.9	53.4
Edmonton, Alta.	144,730	90,205	53,520	62.3	37.0
Halifax, NS	59,690	28,570	29,925	47.9	50.1
Hamilton, Ont.	146,280	92,920	53,275	63.5	36.4
Kitchener, Ont.	66,555	38,675	27,840	58.1	41.8
London, Ont.	87,140	53,030	33,775	60.9	38.8
Montreal, Que.	805,775	190,780	614,010	23.7	76.2
Ottawa—Hull, Ont., Que.	170,025	78,815	90,510	46.4	53.2

14.4 Type of dwelling, by province and by census metropolitan area, 1971 (concluded)

Province and census metropolitan area	Total dwellings ¹	Single detached	Multiple-unit types ²	Single detached %	Multiple-unit types ² %
METROPOLITAN AREA (concluded)					
Quebec, Que.	127,375	45,085	81,925	35.4	64.3
Regina, Sask.	42,525	29,050	13,245	68.3	31.1
Saint John, NB	28,690	12,880	15,335	44.9	53.5
St. Catharines—Niagara, Ont.	88,940	65,350	23,405	73.5	26.3
St. John's, Nfld.	29,740	15,965	13,700	53.7	46.1
Saskatoon, Sask.	38,590	25,520	12,760	66.1	33.1
Sudbury, Ont.	39,390	23,725	15,360	60.2	39.0
Thunder Bay, Ont.	32,195	24,525	7,595	76.2	23.6
Toronto, Ont.	773,985	354,965	418,755	45.9	54.1
Vancouver, BC	345,870	216,455	127,205	62.6	36.8
Victoria, BC	66,365	42,875	22,855	64.6	34.4
Windsor, Ont.	74,170	52,910	21,135	71.3	28.5
Winnipeg, Man.	166,480	105,570	60,570	63.4	36.4

¹Includes mobile homes.

²Includes double and row houses, apartments, flats, duplexes, etc.

14.5 Owned and rented dwellings, by province and type of locality, censuses of 1961 and 1971

Province or territory and type of locality	1961			1971		
	Owned	Rented	Owned/rented ratio	Owned	Rented	Owned/rented ratio
PROVINCE						
Newfoundland	76,691	11,249	87.2/12.8	88,335	22,110	80.0/20.0
Prince Edward Island	18,958	4,984	79.2/20.8	20,725	7,155	74.3/25.7
Nova Scotia	131,405	43,935	74.9/25.1	147,705	59,800	71.2/28.8
New Brunswick	94,022	38,692	70.8/29.1	109,450	48,185	69.4/30.6
Quebec	583,981	607,387	49.0/51.0	761,340	843,450	47.4/52.6
Ontario	1,157,229	483,521	70.5/29.5	1,400,340	825,145	62.9/37.1
Manitoba	176,156	63,598	73.5/26.5	190,585	97,790	66.1/33.9
Saskatchewan	188,226	57,198	76.7/23.3	194,535	73,035	72.7/27.3
Alberta	248,537	101,272	71.0/29.0	296,705	167,910	63.9/36.1
British Columbia	326,090	133,442	71.0/29.0	422,785	244,765	63.3/36.7
Yukon Territory and Northwest Territories	4,292	3,628	54.2/45.8	4,425	8,240	35.0/65.0
Canada	3,005,587	1,548,906	66.0/34.0	3,636,925	2,397,585	60.3/39.7
TYPE OF LOCALITY						
Urban	1,946,559	1,333,909	59.3/40.7	2,572,885	2,164,535	54.3/45.7
500,000 and over	1,178,136 ¹	910,934 ¹	56.4/43.6 ¹	956,765	1,118,550	46.1/53.9
100,000-499,999				556,375	428,770	56.5/43.5
30,000-99,999				304,450	230,365	56.9/43.1
5,000-29,999				449,685	248,740	64.4/35.6
Under 5,000	244,865	106,452	69.7/30.3	305,610	138,105	68.9/31.1
Rural	1,059,028	214,997	83.1/16.9	1,064,045	233,050	82.0/18.0
Non-farm	641,038	183,434	77.8/22.2	758,830	210,830	78.3/21.7
Farm	417,990	31,563	93.0/7.0	305,210	22,215	93.2/6.8

¹1961 figures available for urban group "100,000 and over" only.

14.6 Average number of rooms per dwelling and percentage of crowded dwellings¹, by province, censuses of 1961 and 1971

Province	Average number of rooms per dwelling		Percentage of crowded dwellings ¹	
	1961	1971	1961	1971
Newfoundland	5.9	5.8	29.9	23.6
Prince Edward Island	6.4	6.1	17.0	12.8
Nova Scotia	5.8	5.7	18.2	12.4
New Brunswick	5.9	5.7	21.0	15.2
Quebec	5.3	5.2	21.8	12.4
Ontario	5.5	5.6	11.8	6.8
Manitoba	4.9	5.2	16.8	9.2
Saskatchewan	4.9	5.3	18.7	9.8
Alberta	4.9	5.4	17.5	8.3
British Columbia	4.9	5.2	12.1	6.8
Yukon Territory and Northwest Territories	3.4	4.3	45.4	30.7
Canada	5.3	5.4	16.5	9.4

¹Dwellings in which the number of persons exceeds the number of rooms.

14.7 Period of construction and length of occupancy, by province and by census metropolitan area, 1971 (percentage)

Province and census metropolitan area	Period of construction				Length of occupancy					
	Before 1946	1946-60	1961-71 ¹	Total	Less than 1 year	1-2 years	3-5 years	6-10 years	11+ years	Total
PROVINCE										
Newfoundland	35.0	36.4	28.6	100.0	11.1	11.7	13.5	16.1	47.6	100.0
Prince Edward Island	62.2	18.7	19.0	100.0	11.7	11.4	12.3	14.8	49.7	100.0
Nova Scotia	53.2	25.6	21.1	100.0	14.4	13.1	12.7	14.1	45.7	100.0
New Brunswick	50.4	27.9	21.7	100.0	14.1	13.0	13.3	14.6	45.0	100.0
Quebec	37.5	33.9	28.6	100.0	17.2	17.5	15.5	17.9	32.0	100.0
Ontario	39.8	32.2	28.0	100.0	17.5	17.0	16.2	16.3	32.9	100.0
Manitoba	42.6	32.2	25.3	100.0	17.8	14.6	14.6	16.2	36.8	100.0
Saskatchewan	42.3	32.6	25.1	100.0	14.7	12.6	14.2	18.1	40.4	100.0
Alberta	26.8	38.7	34.5	100.0	20.6	16.7	16.5	16.8	29.4	100.0
British Columbia	29.6	35.1	35.3	100.0	22.5	18.3	17.6	15.7	25.9	100.0
Yukon Territory and Northwest Territories	9.5	32.2	58.4	100.0	34.9	26.4	17.9	11.5	9.2	100.0
Canada	38.0	33.2	28.8	100.0	17.8	16.6	15.8	16.6	33.2	100.0
METROPOLITAN AREA										
Calgary, Alta.	19.7	40.6	39.7	100.0	25.7	18.1	17.3	15.0	23.9	100.0
Chicoutimi—Jonquière, Que.	36.8	40.4	22.8	100.0	15.8	15.5	14.0	15.4	39.2	100.0
Edmonton, Alta.	18.0	41.2	40.9	100.0	23.6	18.6	17.3	16.6	23.8	100.0
Halifax, NS	34.8	32.8	32.4	100.0	22.7	17.5	16.1	15.4	28.2	100.0
Hamilton, Ont.	37.5	34.1	28.4	100.0	16.7	17.0	16.9	16.6	32.8	100.0
Kitchener, Ont.	32.9	29.9	37.2	100.0	21.7	18.4	15.4	15.2	29.2	100.0
London, Ont.	39.4	29.7	30.9	100.0	21.2	17.2	16.5	14.6	30.5	100.0
Montreal, Que.	31.1	36.4	32.4	100.0	19.5	19.9	16.5	19.0	25.1	100.0
Ottawa—Hull, Ont., Que.	28.7	33.9	37.4	100.0	21.5	19.1	17.4	17.2	24.9	100.0
Quebec, Que.	35.2	29.6	35.2	100.0	18.9	17.3	15.9	17.4	30.5	100.0
Regina, Sask.	30.5	35.9	33.7	100.0	21.5	16.9	15.7	18.6	27.3	100.0
Saint John, NB	53.7	23.9	22.4	100.0	16.1	16.0	16.7	17.4	33.8	100.0
St. Catharines—Niagara, Ont.	41.8	35.8	22.4	100.0	14.9	14.3	14.8	15.9	40.1	100.0
St. John's, Nfld.	36.2	32.2	31.6	100.0	14.6	14.6	15.6	17.7	37.5	100.0
Saskatoon, Sask.	27.6	35.0	37.3	100.0	24.3	17.5	15.7	16.7	25.8	100.0
Sudbury, Ont.	30.6	41.4	28.1	100.0	19.6	18.1	15.7	15.3	31.2	100.0
Thunder Bay, Ont.	44.4	35.3	20.2	100.0	14.6	14.1	15.2	16.9	39.2	100.0
Toronto, Ont.	30.7	35.3	34.0	100.0	19.1	19.4	17.5	17.2	26.8	100.0
Vancouver, BC	30.8	35.5	33.7	100.0	22.1	17.9	17.3	15.6	27.1	100.0
Victoria, BC	36.2	32.9	30.9	100.0	22.0	18.1	17.3	16.6	26.0	100.0
Windsor, Ont.	49.1	31.6	19.3	100.0	16.9	14.0	13.5	15.1	40.5	100.0
Winnipeg, Man.	41.5	33.4	25.1	100.0	20.2	16.1	15.1	15.5	33.1	100.0

¹Includes the first 5 months only of 1971.**14.8 Median value and extent of mortgages for single detached owned non-farm dwellings and average cash rent for rented non-farm dwellings, by province and by census metropolitan area, 1971**

Province and census metropolitan area	Non-farm dwellings				
	Single detached owned			Rented	
	No.	Median value \$	Dwellings with mortgage %	No.	Average monthly cash rent \$
PROVINCE					
Newfoundland	77,080	7,828	17.4	21,980	93
Prince Edward Island	14,325	9,454	36.0	6,975	86
Nova Scotia	124,705	10,829	32.9	59,410	104
New Brunswick	91,420	9,153	33.5	47,890	87
Quebec	499,640	14,667	58.4	836,935	92
Ontario	1,117,965	23,768	56.4	815,190	129
Manitoba	148,015	14,904	47.6	95,585	104
Saskatchewan	129,870	11,467	40.0	68,620	89
Alberta	219,110	19,933	59.1	162,460	116
British Columbia	366,085	23,502	56.8	242,620	120
Yukon Territory and Northwest Territories	3,510	8,639	36.0	8,245	95
Canada	2,791,730	19,020	52.8	2,365,905	110
METROPOLITAN AREA					
Calgary, Alta.	62,045	22,461	74.7	52,135	127
Chicoutimi—Jonquière, Que.	11,410	15,489	69.9	13,505	83
Edmonton, Alta.	71,555	23,665	69.9	64,205	124
Halifax, NS	24,275	22,820	64.2	29,915	129
Hamilton, Ont.	82,280	25,172	62.7	52,775	123
Kitchener, Ont.	35,215	23,968	63.9	26,415	120
London, Ont.	45,370	20,916	63.1	34,725	121
Montreal, Que.	165,350	18,603	75.5	519,165	100
Ottawa—Hull, Ont., Que.	69,075	25,758	72.3	83,880	135
Quebec, Que.	39,080	19,422	73.9	73,365	99
Regina, Sask.	24,070	16,443	62.4	16,865	102
Saint John, NB	11,060	15,528	54.8	14,155	83
St. Catharines—Niagara, Ont.	57,170	19,966	52.6	24,890	106
St. John's, Nfld.	13,810	19,945	45.5	9,995	104

14.8 Median value and extent of mortgages for single detached owned non-farm dwellings and average cash rent for rented non-farm dwellings, by province and by census metropolitan area, 1971 (concluded)

Province and census metropolitan area	Non-farm dwellings				
	Single detached owned			Rented	
	No.	Median value \$	Dwellings with mortgage %	No.	Average monthly cash rent \$
METROPOLITAN AREA (concluded)					
Saskatoon, Sask.	21,065	17,230	62.0	15,635	101
Sudbury, Ont.	18,990	22,306	61.2	16,485	121
Thunder Bay, Ont.	21,620	16,212	50.4	8,565	98
Toronto, Ont.	316,790	32,408	66.1	347,420	151
Vancouver, BC	186,025	26,702	61.9	141,715	130
Victoria, BC	37,250	25,007	58.2	25,545	119
Windsor, Ont.	46,550	22,327	51.3	21,790	123
Winnipeg, Man.	91,115	17,780	58.3	67,905	108

14.9 Percentage distribution of principal fuels used for home heating, by province and by census metropolitan area, 1971

Province and census metropolitan area	Total	Oil or other liquid fuel	Gas	Coal or coke	Other
PROVINCE					
Newfoundland	100.0	82.3	0.1	2.6	15.0
Prince Edward Island	100.0	87.2	0.5	1.5	10.8
Nova Scotia	100.0	83.6	0.8	5.5	10.1
New Brunswick	100.0	84.5	0.8	0.7	14.0
Quebec	100.0	79.3	8.0	0.1	12.6
Ontario	100.0	54.0	37.1	0.8	8.1
Manitoba	100.0	32.3	54.4	2.1	11.2
Saskatchewan	100.0	32.7	60.4	1.6	5.2
Alberta	100.0	9.4	83.6	3.2	3.8
British Columbia	100.0	47.0	40.8	0.5	11.6
Yukon Territory and Northwest Territories	100.0	79.5	3.7	0.1	16.6
Canada	100.0	57.1	32.1	1.1	9.8
METROPOLITAN AREA					
Calgary, Alta.	100.0	2.3	94.9	--	2.8
Chicoutimi—Jonquière, Que.	100.0	87.5	0.7	0.1	11.7
Edmonton, Alta.	100.0	2.7	94.0	0.4	3.0
Halifax, NS	100.0	93.9	0.5	0.6	4.9
Hamilton, Ont.	100.0	53.5	40.9	1.5	4.0
Kitchener, Ont.	100.0	55.1	36.1	0.6	8.2
London, Ont.	100.0	30.7	63.0	0.5	5.8
Montreal, Que.	100.0	76.8	14.1	0.2	8.9
Ottawa—Hull, Ont., Que.	100.0	78.7	13.5	0.1	7.7
Quebec, Que.	100.0	86.5	0.3	0.1	13.1
Regina, Sask.	100.0	8.6	88.9	0.1	2.3
Saint John, NB	100.0	95.5	1.2	0.4	2.9
St. Catharines—Niagara, Ont.	100.0	31.6	64.8	0.2	3.3
St. John's, Nfld.	100.0	88.1	0.1	1.6	10.3
Saskatoon, Sask.	100.0	3.4	94.3	--	2.2
Sudbury, Ont.	100.0	68.5	22.7	0.2	8.6
Thunder Bay, Ont.	100.0	34.4	60.3	0.3	5.0
Toronto, Ont.	100.0	53.8	39.7	0.9	5.6
Vancouver, BC	100.0	38.1	55.6	0.4	5.8
Victoria, BC	100.0	83.4	2.4	0.7	13.5
Windsor, Ont.	100.0	12.8	77.8	0.6	8.8
Winnipeg, Man.	100.0	17.6	76.2	0.4	5.8

14.10 Percentage of dwellings with specified facilities, by province and type of locality, Census 1971

Province or territory and type of locality	Percentage of dwellings with		
	Running water	Bath or shower (exclusive use)	Flush toilet (exclusive use)
Newfoundland	83.7	66.3	73.6
Rural	70.4	45.3	54.0
Urban	93.0	81.0	87.4
Prince Edward Island	86.1	75.0	78.0
Rural	78.1	63.6	65.9
Urban	98.3	92.3	96.2
Nova Scotia	92.2	80.3	84.7
Rural	83.4	65.6	70.3
Urban	98.7	91.2	95.4

14.10 Percentage of dwellings with specified facilities, by province and type of locality, Census 1971 (concluded)

Province or territory and type of locality	Percentage of dwellings with		
	Running water	Bath or shower (exclusive use)	Flush toilet (exclusive use)
New Brunswick	92.1	80.5	86.2
Rural	83.4	65.1	72.5
Urban	98.0	90.9	95.4
Quebec	98.9	92.2	97.4
Rural	95.3	77.1	92.3
Urban	99.6	95.1	98.3
Ontario	98.0	94.5	95.7
Rural	89.9	82.4	84.3
Urban	99.5	96.8	98.0
Manitoba	90.2	85.4	85.1
Rural	66.9	59.9	55.3
Urban	98.9	95.0	96.3
Saskatchewan	83.8	78.7	77.5
Rural	66.5	60.3	55.9
Urban	97.6	93.4	94.6
Alberta	92.6	88.5	88.9
Rural	72.6	66.2	64.7
Urban	99.0	95.6	96.5
British Columbia	98.0	95.0	95.6
Rural	92.5	88.1	88.5
Urban	99.6	96.9	97.6
Yukon Territory and Northwest Territories			
Rural	66.0	64.1	62.3
Urban	35.1	33.5	30.0
Canada	87.5	85.2	84.6
Rural	96.1	90.8	93.1
Urban	84.4	73.5	77.3
	99.3	95.6	97.6

14.11 Annual estimates of household facilities and equipment, 1973

Item	Estimated households 1973 (April) '000	Percentage of households	
		1973 (April)	1972 (May)
Total households	6,266	100.0	100.0
Principal heating facilities			
Furnaces	5,057	80.7	80.6
Oil	2,967	47.4	48.1
Gas	2,030	32.4	31.4
Wood or coal	57	0.9	1.1
Other equipment	1,208	19.3	19.4
Oil	501	8.0	8.8
Gas	161	2.6	2.3
Wood or coal	101	1.6	1.9
Electricity	437	7.0	6.4
Cooking fuel			
Electricity	5,121	81.7	80.7
Piped gas	665	10.6	10.9
Bottled gas	133	2.1	2.3
Wood or coal	137	2.2	2.7
Kerosene, oil or other	190	3.0	3.3
Fuel used for piped hot water supply			
Electricity	3,014	48.1	48.5
Gas	2,053	32.8	31.5
Oil	819	13.1	12.8
Coal or wood	32	0.5	0.8
No hot water supply	347	5.5	6.4
Refrigerators and home freezers			
Electric refrigerators	6,181	98.6	98.7
Home freezers	2,344	37.4	35.6
Washing machines			
Automatic	2,815	44.9	42.7
Other electric	2,023	32.3	36.1
Clothes dryers	2,990	47.7	45.5
Telephones	5,955	95.0	94.6
Radios			
All types, except car	6,124	97.7	97.6
FM receivers	4,213	67.2	62.4

14.11 Annual estimates of household facilities and equipment, 1973 (concluded)

Item	Estimated households 1973 (April) '000	Percentage of households	
		1973 (April)	1972 (May)
TV sets			
All types	6,017	96.0	95.8
Black and white	4,965	79.2	83.8
Colour	2,081	33.2	24.2
Record players	4,532	72.3	70.9
Automobiles	4,884	77.9	77.3
One automobile	3,592	57.3	58.8
Two or more automobiles	1,292	20.6	18.5
Miscellaneous			
Window-type air conditioners	417	6.7	5.8
Automatic dishwashers	670	10.7	9.2
Adult-size bicycles	1,825	29.1	27.9
Snowmobiles	574	9.2	8.3
Tape recorders	1,981	31.6	24.6 ¹
Electric sewing machines	4,256	67.9	64.4 ¹
Vacuum cleaners	5,256	83.9	82.9 ¹
Vacation homes	449	7.2	²

¹1971 figures (data not collected in 1972).²Data not collected in 1972.**14.12 Value of new and repair construction work performed, 1969-73¹**

Year	New \$'000,000	Repair \$'000,000	Total \$'000,000	Total construction as percentage of gross national expenditure
1969	10,825	2,382	13,207	16.6
1970	11,320	2,461	13,781	16.1
1971	13,276	2,589	15,865	17.0
1972	14,298	2,730	17,028	17.2
1973	15,092	2,966	18,058	..

¹Actual expenditures 1969-71; preliminary actual 1972; intentions 1973.**14.13 Value of construction work performed, by contractors and others, 1969-73¹ (million dollars)**

Item	1969	1970	1971	1972	1973
Contract construction	10,521	10,827	12,703	13,541	14,172
New	9,134	9,356	11,108	11,872	12,352
Repair	1,387	1,471	1,595	1,669	1,820
Other construction ²	2,686	2,954	3,162	3,487	3,886
New	1,691	1,964	2,168	2,426	2,740
Repair	995	990	994	1,061	1,146
Total, construction	13,207	13,781	15,865	17,028	18,058
New	10,825	11,320	13,276	14,298	15,092
Repair	2,382	2,461	2,589	2,730	2,966

¹Actual expenditures 1969-71; preliminary actual 1972; intentions 1973.²Work done by the labour forces of utilities, government departments and other employers not primarily engaged in the construction industry.

14.14 Value of construction work performed, by type of structure, 1971-73: (thousand dollars)

Type of structure	1971			1972			1973		
	New	Repair	Total	New	Repair	Total	New	Repair	Total
BUILDING CONSTRUCTION									
Residential	4,025,434	950,512	4,975,946	4,736,117	1,024,280	5,760,397	4,740,000	1,113,294	5,853,294
Industrial	830,507	192,449	1,022,956	714,828	183,407	898,235	686,666	194,520	881,186
Factories, plants, workshops, food canneries	569,352	148,373	717,725	533,953	157,755	691,708	581,952	166,122	748,074
Mine and mine mill buildings	242,985	25,057	268,042	169,456	10,996	180,452	90,260	12,326	102,586
Railway stations, offices, roadway buildings	12,023	10,897	22,920	6,549	8,899	15,448	8,608	9,617	18,225
Railway shops, engine houses, water and fuel stations	6,147	8,122	14,269	4,870	5,757	10,627	5,846	6,455	12,301
Commercial	1,786,021	218,162	1,405,083	1,389,982	212,658	1,602,640	1,664,643	232,672	1,897,315
Warehouses, storehouses, refrigerated storage, etc.	71,243	19,675	90,918	91,221	20,263	111,484	101,588	24,119	125,707
Grain elevators	2,800	3,502	6,302	4,834	5,679	10,513	9,608	6,521	16,129
Hotels, clubs, restaurants, cafeterias, tourist cabins	149,582	18,297	167,779	138,004	16,473	154,477	184,424	18,128	202,552
Office buildings	514,526	84,190	598,066	590,362	87,030	677,392	680,251	97,237	777,488
Stores, retail and wholesale	261,951	44,116	305,967	341,095	41,641	382,736	429,451	40,672	470,123
Garages and service stations	75,753	28,227	103,980	90,225	26,602	116,827	112,520	29,241	141,761
Theatres, arenas, amusement and recreational buildings	109,293	18,597	127,890	131,213	14,101	145,314	145,735	15,903	161,638
Laundries and dry-cleaning establishments	1,643	1,158	2,801	3,028	869	3,897	1,066	851	1,917
Institutional	1,317,055	138,952	1,456,007	1,146,729	156,417	1,303,146	1,020,582	166,883	1,187,465
Schools and other educational buildings	874,612	77,495	952,107	755,058	88,964	844,022	613,675	93,926	707,601
Churches and other religious buildings	13,623	6,983	20,606	15,144	6,929	22,073	11,716	6,154	17,870
Hospitals, sanatoria, clinics, first-aid stations, etc.	263,590	36,082	299,672	227,916	36,712	264,628	260,987	39,810	300,797
Other	165,230	18,392	183,622	148,611	23,812	172,423	134,204	26,993	161,197
Other building	397,507	109,402	506,909	416,540	125,037	541,567	444,853	133,715	578,568
Farm buildings (excl. dwellings)	151,245	59,090	210,335	170,738	66,889	237,627	181,638	72,484	254,122
Broadcasting, radio and television, relay and boosting stations, telephone exchanges	47,525	11,192	58,717	49,302	9,976	59,278	74,467	10,566	85,033
Aeroplane hangars	29,510	3,313	34,123	10,344	3,324	13,868	4,350	3,641	7,991
Passenger terminals, bus, boat or air	7,529	5,413	29,687	41,673	5,842	47,515	36,075	6,092	42,167
Armouries, barracks, drill halls, etc.	7,529	6,412	13,941	6,552	5,827	12,379	8,132	6,220	14,352
Bunkhouses, dormitories, camp cookeries, bush depots and camps	11,547	3,221	14,768	10,355	3,450	13,805	13,610	3,524	17,134
Laboratories	21,100	4,122	25,222	31,028	2,599	33,627	26,268	2,842	29,110
Other	102,477	17,639	120,116	96,548	26,920	123,468	100,313	28,346	128,659
Total, building construction	7,757,424	1,609,477	9,366,901	8,404,196	1,701,789	10,105,985	8,556,744	1,841,084	10,397,828
ENGINEERING CONSTRUCTION									
Marine	96,073	22,953	119,026	118,654	21,737	140,391	161,208	22,847	184,055
Docks, wharves, piers, breakwaters	40,611	13,373	53,984	57,531	10,542	68,073	82,693	10,802	93,495
Retaining walls, embankments, riprapping	6,518	1,519	8,037	10,389	1,182	11,571	12,850	1,356	14,206
Canals and waterways	34,927	1,985	36,722	34,604	3,576	38,180	31,441	2,620	34,061
Dredging and pile driving	1,075	4,355	5,430	6,446	3,888	10,334	15,508	4,151	19,659
Dike construction	2,889	3,366	6,255	3,555	304	4,159	7,831	370	8,201
Logging booms	508	1,786	2,291	5,304	421	5,725	461	1,017	910
Other	5,083	1,786	7,291	5,304	2,213	7,517	10,424	3,099	13,523
Road, highway and aerodrome	1,315,990	272,307	1,588,297	1,340,341	277,340	1,617,681	1,393,719	298,614	1,692,333
Highway, road and street construction, (incl. grading, scraping, oiling, filling)	1,250,100	260,152	1,510,252	1,271,010	267,234	1,538,244	1,314,039	287,050	1,601,089
Parking lots	17,676	2,808	20,484	13,760	16,673	30,433	16,835	3,129	19,964
Sidewalks, paths	6,287	6,287	12,574	19,916	4,285	24,201	19,693	5,050	24,743
Aerodromes, landing fields, runways, tarmac	30,773	3,060	33,833	35,655	2,908	38,563	43,152	3,385	46,537

14.14 Value of construction work performed, by type of structure, 1971-73¹ (thousand dollars) (concluded)

Type of structure	1971			1972			1973		
	New	Repair	Total	New	Repair	Total	New	Repair	Total
ENGINEERING CONSTRUCTION (concluded)									
Waterworks and sewerage systems	513,649	79,794	593,443	618,181	94,091	712,272	679,844	97,722	777,566
Tile drains, drainage ditches, storm sewers	94,627	14,599	109,226	141,441	15,682	157,123	141,441	17,481	158,922
Water mains, hydrants and services	125,477	39,437	164,914	160,527	38,361	198,888	173,875	37,438	211,313
Sewerage systems and connections	249,522	19,431	268,953	283,838	29,371	313,209	304,414	32,548	336,962
Pumping stations, water	38,305	4,976	43,281	27,333	9,359	36,692	30,894	8,902	39,796
Water storage tanks	5,718	1,351	7,069	5,042	1,318	6,360	6,397	1,353	7,750
Dams and irrigation	44,283	12,005	56,288	59,906	11,978	71,884	53,352	13,333	66,685
Dams and reservoirs	21,856	3,411	25,267	29,970	2,785	32,755	26,352	2,742	29,094
Irrigation and land reclamation projects	22,427	8,594	31,021	29,936	9,193	39,129	27,000	10,591	37,591
Electric power	1,093,470	112,943	1,206,413	1,165,449	110,504	1,275,953	1,479,533	125,827	1,605,360
Electric power generating plants, including water conveying and controlling structures	580,922	30,143	611,065	597,049	34,977	632,026	901,092	41,952	943,044
Power transformer stations	12,953	834	13,787	13,737	484	14,221	8,626	608	9,234
Electric transmission and distribution lines, trolley wires	488,399	77,434	565,833	540,805	69,627	610,432	555,119	78,800	633,919
Street lighting	11,556	4,532	16,088	13,858	5,416	19,274	14,696	4,407	19,103
Railway, telephone and telegraph	415,362	200,048	615,410	466,997	227,524	694,521	522,492	261,363	783,855
Railway tracks and roadbeds	146,234	123,834	270,068	161,075	159,967	321,042	183,429	171,272	354,701
Signals and interlockers	11,332	17,644	28,976	9,536	12,574	22,110	12,842	13,698	26,540
Telegraph and telephone lines, underground and marine cables	257,796	58,570	316,366	296,386	64,983	361,369	326,221	76,393	402,614
Gas and oil facilities	1,128,306	161,708	1,290,014	1,222,137	166,799	1,388,936	1,311,101	191,364	1,502,465
Gas mains and services	177,621	11,291	188,912	192,632	11,693	204,325	144,636	12,981	157,617
Pumping stations, oil	28,630	3,681	32,311	19,331	2,729	22,060	18,622	3,252	21,874
Pumping stations, gas	13,182	880	14,062	14,162	1,882	16,044	22,516	1,690	24,206
Oil storage tanks	27,897	3,769	31,666	19,062	4,349	23,415	33,146	4,590	37,736
Gas storage tanks	1,841	1,145	2,986	4,657	213	4,870	1,289	250	1,539
Oil pipelines	20,314	6,780	27,094	44,073	4,748	48,821	73,050	7,497	80,547
Gas pipelines	195,487	1,268	196,755	177,783	1,170	178,955	100,778	901	101,679
Oil and gas wells	419,311	61,992	481,303	607,172	64,460	671,632	699,465	78,222	777,687
Oil refinery — processing units	143,401	43,828	187,229	155,287	45,243	200,530	163,702	48,657	212,359
Natural gas processing plants	180,618	28,104	208,722	87,972	30,512	118,484	103,897	33,324	137,221
Other engineering	911,174	118,368	1,029,542	901,432	108,484	1,009,916	933,826	113,901	1,047,727
Bridges, trestles, culverts, overpasses, viaducts	159,650	40,551	200,201	142,645	37,226	179,871	142,124	37,141	179,265
Tunnels and subways	43,800	1,444	45,244	43,465	606	44,071	31,633	300	31,933
Incinerators	4,382	796	5,178	4,489	828	5,317	3,444	909	4,353
Park systems, landscaping, sodding, etc.	36,182	11,677	47,859	43,161	9,100	52,261	47,085	12,456	59,541
Swimming pools, tennis courts, outdoor recreation facilities	7,948	2,261	10,209	12,476	1,852	14,328	18,485	1,260	19,745
Mine shafts and other below surface workings	232,091	4,886	236,977	192,899	2,702	195,601	206,925	2,354	209,279
Fences, snowsheds, signs, guard rails	27,530	12,764	40,294	30,690	13,191	43,881	32,023	14,314	46,337
Other engineering	399,591	43,989	443,580	431,607	42,979	474,586	452,107	45,167	497,274
Total, engineering construction	5,518,307	980,126	6,498,433	5,893,097	1,028,457	6,921,554	6,535,075	1,124,971	7,660,046
Total, all construction	13,275,731	2,589,603	15,865,334	14,297,293	2,730,246	17,027,539	15,091,819	2,966,055	18,057,874

¹Actual expenditures 1971; preliminary actual 1972; intentions 1973.

14.15 Labour content, cost of materials and value of work performed in construction, by province and by employer, 1971-73¹

Province and employer	Year	Labour content		Cost of materials used \$'000	Value of work performed \$'000
		No.	Value \$'000		
PROVINCE					
Newfoundland	1971	22,598	185,580	214,438	552,762
	1972	18,148	163,484	184,060	480,384
	1973	14,553	141,996	156,725	414,947
Prince Edward Island	1971	2,754	20,292	27,584	61,230
	1972	2,613	21,125	28,280	63,684
	1973	2,801	24,202	33,434	73,230
Nova Scotia	1971	19,009	161,750	189,415	452,758
	1972	18,445	162,060	193,223	461,145
	1973	20,059	190,790	227,727	543,792
New Brunswick	1971	17,077	130,730	147,047	351,857
	1972	16,426	137,463	159,338	374,745
	1973	16,982	154,752	178,755	417,155
Quebec	1971	136,424	1,221,744	1,373,266	3,411,898
	1972	126,746	1,303,005	1,468,526	3,632,526
	1973	125,952	1,400,563	1,582,214	3,905,567
Ontario	1971	206,856	2,092,294	2,270,153	5,596,904
	1972	204,401	2,317,383	2,534,208	6,232,540
	1973	196,828	2,409,535	2,608,026	6,458,949
Manitoba	1971	27,598	239,630	272,490	671,070
	1972	27,004	265,995	300,585	744,946
	1973	27,874	297,476	339,488	839,590
Saskatchewan	1971	22,166	190,623	221,120	535,154
	1972	21,578	203,662	241,683	577,468
	1973	21,549	218,877	259,676	619,789
Alberta	1971	61,917	627,466	770,584	1,845,946
	1972	61,482	667,112	821,478	1,966,100
	1973	62,604	736,607	894,642	2,172,678
British Columbia, the Yukon Territory and Northwest Territories	1971	73,031	821,283	976,761	2,385,755
	1972	69,325	854,129	1,027,467	2,494,001
	1973	66,694	888,826	1,075,136	2,612,177
Canada	1971	589,430	5,691,392	6,462,858	15,865,334
	1972	566,168	6,095,418	6,958,848	17,027,539
	1973	555,896	6,463,624	7,355,823	18,057,874
EMPLOYER					
Contractors	1971	461,979	4,527,822	5,121,894	12,702,839
	1972	438,558	4,796,968	5,490,507	13,541,061
	1973	425,132	5,021,622	5,721,455	14,172,161
Utilities	1971	52,204	525,882	721,462	1,588,786
	1972	52,052	584,765	792,536	1,749,340
	1973	56,003	678,119	922,119	2,036,192
Governments	1971	48,635	399,313	280,685	878,854
	1972	49,536	453,897	317,676	986,657
	1973	49,428	491,043	343,223	1,066,208
Miscellaneous	1971	26,612	238,375	338,817	694,855
	1972	26,022	259,788	358,129	750,481
	1973	25,333	272,840	369,026	783,313

¹Actual expenditures 1971; preliminary actual 1972; intentions 1973.**14.16 Value of building permits issued, by province, 1972 and 1973 with totals for 1969-73 (thousand dollars)**

Province or territory and year	Residential construction			Non-residential construction			Total
	New	Repair	Total	Indus- trial	Commer- cial	Institutional and government	
Newfoundland	1972	15,652	1,850	17,502	1,679	4,858	17,207
	1973	27,983	2,469	30,452	343	24,898	32,519
Prince Edward Island	1972	3,249	248	3,497	27	1,737	1,250
	1973	4,423	356	4,779	496	5,313	3,623
Nova Scotia	1972	80,100	4,871	84,971	7,756	55,261	14,122
	1973	104,717	6,308	111,025	9,367	46,389	14,652
New Brunswick	1972	60,345	4,397	64,742	3,658	29,607	21,860
	1973	64,029	4,365	68,394	20,378	38,754	17,734
Quebec	1972	646,461	29,950	676,411	116,432	305,417	188,254
	1973	773,352	41,850	815,202	207,959	380,301	295,454
Ontario	1972	1,640,929	73,151	1,714,080	278,890	564,472	430,965
	1973	2,267,123	98,901	2,366,024	428,004	849,323	377,689
Manitoba	1972	119,007	3,769	122,776	14,306	39,773	47,106
	1973	125,707	4,473	130,180	13,857	52,003	27,755
Saskatchewan	1972	62,107	2,839	64,946	6,089	19,278	17,559
	1973	94,337	3,418	97,755	11,894	47,042	27,288

14.16 Value of building permits issued, by province, 1972 and 1973 with totals for 1969-73 (thousand dollars) (concluded)

Province or territory and year		Residential construction			Non-residential construction			Total
		New	Repair	Total	Industrial	Commercial	Institutional and government	
Alberta	1972	349,685	8,413	358,098	33,809	176,236	67,126	635,269
	1973	388,868	10,900	399,768	76,856	229,114	57,189	762,927
British Columbia	1972	496,964	28,024	524,988	57,393	200,981	86,937	870,299
	1973	694,723	37,388	732,111	84,058	292,807	117,563	1,226,539
Yukon Territory	1972	2,302	5	2,307	—	324	—	2,631
	1973	9	—	9	12	56	—	77
Northwest Territories	1972	3,924	169	4,093	440	3,655	733	8,921
	1973	6,949	434	7,383	530	4,340	296	12,549
Total	1969	2,350,232	78,958	2,429,190	567,048	839,155	1,060,158	4,895,551
	1970	2,235,938	75,625	2,311,563	497,682	807,374	1,083,540	4,700,159
	1971	3,121,347	81,716	3,203,063	470,924	1,069,785	967,809	5,711,581
	1972	3,480,725	157,686	3,638,411	520,479	1,411,599	893,119	6,463,608
	1973	4,552,220	210,862	4,763,082	853,754	1,970,340	971,762	8,558,938

14.17 Estimated value of proposed construction as indicated by building permits issued in 50 municipalities, 1972 and 1973 (thousand dollars)

Province and municipality	1972	1973	Province and municipality	1972	1973
NEWFOUNDLAND			Oshawa	32,236	35,852
St. John's	17,714	69,455	Ottawa	195,836	243,652
PRINCE EDWARD ISLAND			Scarborough (borough)	200,045	203,801
Charlottetown	4,445	8,531	Thunder Bay	28,314	56,405
NOVA SCOTIA			Toronto	250,303	394,391
Halifax	48,240	47,070	Windsor	65,361	59,311
NEW BRUNSWICK			York (borough)	24,153	55,992
Fredericton	11,981	22,237	York North (borough)	257,803	282,035
Moncton	42,201	19,733	MANITOBA		
Saint John	28,750	42,529	Fort Garry		
QUEBEC			St. Boniface		
La Salle	16,635	16,601	St. James	178,271	171,142
Montreal	164,491	235,320	Winnipeg		
Quebec	70,452	42,994	SASKATCHEWAN		
Ste. Foy	33,346	27,192	Moose Jaw	7,304	10,144
St. Laurent	32,533	53,099	Prince Albert	8,674	12,877
Sept Îles	19,475	22,234	Regina	37,567	67,471
Sherbrooke	28,735	21,005	Saskatoon	24,010	40,981
Trois-Rivières	16,021	25,430	ALBERTA		
ONTARIO			Calgary	219,844	240,484
Brampton	18,656	20,711	Edmonton	179,955	254,684
Burlington	53,425	79,214	Jasper Place	15,908	27,567
Etobicoke (borough)	150,320	248,234	Lethbridge	15,527	16,596
Hamilton	84,453	83,306	Medicine Hat	7,990	14,848
Kitchener	52,139	58,056	RED DEER		
London	92,797	108,040	BRITISH COLUMBIA		
London Township	2,388	2,510	Burnaby District	55,045	69,840
Mississauga	179,515	286,143	Richmond Township	51,711	73,301
Nepean Township	39,323	31,736	Surrey District	47,260	60,762
			Vancouver	125,038	170,724
			Victoria	30,340	42,977

¹Metropolitan Corporation of Greater Winnipeg.

²Jasper Place included with Edmonton following annexation.

14.18 Estimated value of building permits issued in metropolitan areas, 1972 and 1973 (thousand dollars)

Metropolitan area	1972	1973	Metropolitan area	1972	1973
Calgary	219,844	240,484	Saint John	30,136	42,785
Chicoutimi—Jonquière	43,049	42,376	St. Catharines—Niagara	109,274	133,890
Edmonton	236,349	254,684	St. John's ¹	17,714	69,455
Halifax	82,377	106,403	Saskatoon	24,010	40,981
Hamilton	165,772	264,776	Sudbury	64,284	35,473
Kitchener	111,803	127,959	Thunder Bay	28,314	56,405
London	97,229	128,728	Toronto	1,234,865	1,924,634
Montreal	592,623	886,643	Vancouver	395,019	638,445
Ottawa—Hull	352,682	465,918	Victoria	95,799	119,913
Quebec	190,406	154,020	Windsor	73,199	81,622
Regina	37,567	67,471	Winnipeg	178,271	171,142

¹Although this is a metropolitan area, only St. John's proper is included in the building permits survey.

14.19 Capital expenditures¹ on construction and on machinery and equipment, in current and constant (1961) dollars^r, 1965-74

Year	Capital expenditures (\$'000,000)						Capital expenditures as percentage of gross national expenditure	
	Construction		Machinery and equipment		Total			
	Current dollars	Constant 1961 dollars	Current dollars	Constant 1961 dollars	Current dollars	Constant 1961 dollars	Current dollars	Constant 1961 dollars
1965	8,175	7,218	4,760	4,169	12,935	11,387	23.8	22.9
1966	9,281	7,707	5,807	4,931	15,088	12,638	24.8	23.7
1967	9,474	7,579	5,874	5,019	15,348	12,598	23.5	22.9
1968	9,909	7,862	5,546	4,743	15,455	12,605	21.7	21.6
1969	10,824	8,158	6,103	5,081	16,927	13,239	21.6	21.6
1970	11,319	8,188	6,479	5,153	17,798	13,341	21.2	21.2
1971	13,274	9,086	6,910	5,336	20,184	14,422	21.7	21.4
1972	14,298	9,173	7,579	5,742	21,877	14,915	21.3	21.0
1973	16,959	10,112	9,172	6,632	26,131	16,744	22.0	21.8
1974	19,589	—	10,729	—	30,318	—	—	—

¹Actual expenditures 1965-71; preliminary actual 1972 and 1973; intentions 1974.**14.20 Summary of capital and repair expenditures, by economic sector, 1972-74¹ (million dollars)**

Type of enterprise and year	Capital			Repair			Capital and repair		
	Con-struction	Ma-chinery and equip-ment	Total	Con-struction	Ma-chinery and equip-ment	Total	Con-struction	Ma-chinery and equip-ment	Total
Agriculture and fishing	1972	292	938	1,230	115	282	397	407	1,220
	1973	346	1,212	1,558	136	328	464	482	1,540
	1974	417	1,479	1,896	165	376	541	582	1,855
									2,437
Forestry	1972	52	65	117	20	79	99	72	144
	1973	84	102	186	26	90	116	110	192
	1974	112	132	244	27	101	128	139	233
									372
Mining, quarrying and oil wells	1972	1,135	485	1,620	139	395	534	1,274	880
	1973	1,268	416	1,684	157	432	589	1,425	848
	1974	1,598	480	2,078	165	464	629	1,763	944
									2,707
Manufacturing	1972	829	2,119	2,948	252	1,405	1,657	1,081	3,524
	1973	1,038	2,468	3,506	256	1,538	1,794	1,294	4,006
	1974	1,356	3,141	4,497	280	1,658	1,938	1,636	4,799
									6,435
Utilities	1972	2,357	1,872	4,229	428	996	1,424	2,785	2,868
	1973	2,737	2,339	5,076	493	1,000	1,493	3,230	3,339
	1974	3,061	2,573	5,634	560	1,143	1,703	3,621	3,716
									7,337
Construction industry	1972	49	297	346	12	262	274	61	559
	1973	53	325	378	13	287	300	66	612
	1974	58	348	406	14	308	322	72	656
									728
Housing	1972	4,820	—	4,820	1,051	—	1,051	5,871	—
	1973	5,939	—	5,939	1,194	—	1,194	7,133	—
	1974	6,504	—	6,504	1,360	—	1,360	7,864	—
									7,864
Trade (wholesale and retail)	1972	204	455	659	71	78	149	275	533
	1973	288	493	781	72	87	159	360	580
	1974	335	528	863	76	90	166	411	618
									1,029
Finance, insurance and real estate	1972	777	118	895	55	17	72	832	135
	1973	939	140	1,079	70	21	91	1,009	161
	1974	1,135	167	1,302	82	26	108	1,217	193
									1,410
Commercial services	1972	231	857	1,088	28	106	134	259	963
	1973	287	1,067	1,354	29	134	163	316	1,201
	1974	422	1,246	1,668	30	151	181	452	1,397
									1,849
Institutional services	1972	993	225	1,218	131	37	168	1,124	262
	1973	885	221	1,106	131	39	170	1,016	260
	1974	921	197	1,118	146	39	185	1,067	236
									1,303
Government departments	1972	2,731	317	3,048	516	99	615	3,247	416
	1973	3,095	389	3,484	598	115	713	3,693	504
	1974	3,670	438	4,108	658	124	782	4,328	562
									4,890
Total	1972	14,470	7,748	22,218	2,818	3,756	6,574	17,288	11,504
	1973	16,959	9,172	26,131	3,175	4,071	7,246	20,134	13,243
	1974	19,589	10,729	30,318	3,563	4,480	8,043	23,152	15,209
									38,361

¹Actual expenditures 1972; preliminary actual 1973; intentions 1974.

14.21 Capital and repair expenditures for certain economic sectors, 1972-74¹ (million dollars)

Type of enterprise and year	Capital			Repair			Capital and repair		
	Con- struc- tion	Ma- chinery and equip- ment	Total	Con- struc- tion	Ma- chinery and equip- ment	Total	Con- struc- tion	Ma- chinery and equip- ment	Total
MANUFACTURING									
Food and beverages	1972 82.2	199.8	282.0	24.1	121.3	145.4	106.3	321.1	427.4
	1973 107.6	251.7	359.3	25.2	125.5	150.7	132.8	377.2	510.0
	1974 150.6	299.4	450.0	26.8	129.8	156.6	177.4	429.2	606.6
Tobacco products	1972 1.8	10.4	12.2	2.8	7.6	10.4	4.6	18.0	22.6
	1973 1.6	11.5	13.1	2.2	8.2	10.4	3.8	19.7	23.5
	1974 4.9	15.7	20.6	2.3	7.8	10.1	7.2	23.5	30.7
Rubber	1972 23.0	67.6	90.6	5.4	39.4	44.8	28.4	107.0	135.4
	1973 30.4	95.7	126.1	3.5	52.5	56.0	33.9	148.2	182.1
	1974 27.2	108.8	136.0	3.7	56.0	59.7	30.9	164.8	195.7
Leather	1972 6.0	8.0	14.0	1.2	5.9	7.1	7.2	13.9	21.1
	1973 2.7	7.2	9.9	1.2	6.4	7.6	3.9	13.6	17.5
	1974 3.0	8.4	11.4	1.1	6.4	7.5	4.1	14.8	18.9
Textile	1972 20.7	73.0	93.7	6.0	35.3	41.3	26.7	108.3	135.0
	1973 28.7	93.8	122.5	5.8	40.1	45.9	34.5	133.9	168.4
	1974 32.0	129.5	161.5	5.8	45.2	51.0	37.8	174.7	212.5
Knitting mills	1972 1.1	16.8	17.9	0.7	4.2	4.9	1.8	21.0	22.8
	1973 5.3	18.6	23.9	0.5	3.2	3.7	5.8	21.8	27.6
	1974 1.9	16.3	18.2	0.7	3.4	4.1	2.6	19.7	22.3
Clothing	1972 5.2	13.4	18.6	1.8	4.8	6.6	7.0	18.2	25.2
	1973 4.9	13.8	18.7	2.3	4.9	7.2	7.2	18.7	25.9
	1974 3.1	12.3	15.4	1.8	5.1	6.9	4.9	17.4	22.3
Wood	1972 41.0	131.9	172.9	12.3	102.5	114.8	53.3	234.4	287.7
	1973 67.3	177.8	245.1	14.9	112.0	126.9	82.2	289.8	372.0
	1974 57.7	188.4	246.1	14.2	117.4	131.6	71.9	305.8	377.7
Furniture and fixtures	1972 5.3	13.7	19.0	2.3	6.7	9.0	7.6	20.4	28.0
	1973 11.5	19.4	30.9	2.3	6.6	8.9	13.8	26.0	39.8
	1974 15.0	21.7	36.7	2.4	6.9	9.3	17.4	28.6	46.0
Paper and allied industries	1972 116.5	331.5	448.0	18.5	241.9	260.4	135.0	573.4	708.4
	1973 80.7	303.8	384.5	20.6	267.0	287.6	101.3	570.8	672.1
	1974 104.2	409.6	513.8	23.9	317.4	341.3	128.1	727.0	855.1
Printing, publishing and allied industries	1972 15.3	50.3	65.6	4.5	15.5	20.0	19.8	65.8	85.6
	1973 16.1	55.3	71.4	4.4	15.5	19.9	20.5	70.8	91.3
	1974 12.4	55.3	67.7	4.1	16.3	20.4	16.5	71.6	88.1
Primary metals	1972 95.3	276.6	371.9	35.3	383.2	418.5	130.6	659.8	790.4
	1973 75.2	302.5	377.7	37.5	401.2	438.7	112.7	703.7	816.4
	1974 132.2	460.6	592.8	43.3	425.7	469.0	175.5	886.3	1,061.8
Metal fabricating	1972 20.4	98.2	118.6	10.6	61.3	71.9	31.0	159.5	190.5
	1973 44.5	132.7	177.2	11.3	71.5	82.8	55.8	204.2	260.0
	1974 43.9	156.7	200.6	11.6	74.5	86.1	55.5	231.2	286.7
Machinery	1972 14.6	43.2	57.8	6.0	21.1	27.1	20.6	64.3	84.9
	1973 24.6	48.3	72.9	8.0	20.3	28.3	32.6	68.6	101.2
	1974 26.3	63.7	90.0	8.8	22.0	30.8	35.1	85.7	120.8
Transportation equipment	1972 30.2	102.2	132.4	16.4	90.4	106.8	46.6	192.6	239.2
	1973 47.4	118.3	165.7	16.3	100.3	116.6	63.7	218.6	282.3
	1974 68.5	156.2	224.7	17.6	106.7	124.3	86.1	262.9	349.0
Electrical products	1972 18.6	71.0	89.6	7.5	34.5	42.0	26.1	105.5	131.6
	1973 30.8	90.7	121.5	6.8	35.6	42.4	37.6	126.3	163.9
	1974 28.7	107.4	136.1	8.4	41.1	49.5	37.1	148.5	185.6
Non-metallic mineral products	1972 30.7	99.2	129.9	8.5	85.7	94.2	39.2	184.9	224.1
	1973 34.8	147.1	181.9	7.6	99.5	107.1	42.4	246.6	289.0
	1974 40.9	145.1	186.0	7.2	103.8	111.0	48.1	248.9	297.0
Petroleum and coal products	1972 214.0	29.8	243.8	61.3	14.6	75.9	275.3	44.4	319.7
	1973 301.7	12.6	314.3	60.8	13.4	74.2	362.5	26.0	388.5
	1974 452.8	25.3	478.1	68.5	14.1	82.6	521.3	39.4	560.7
Chemical and chemical products ²	1972 78.1	140.4	218.5	22.7	115.8	138.5	100.8	256.2	357.0
	1973 111.6	177.9	289.5	20.8	140.4	161.2	132.4	318.3	450.7
	1974 138.1	286.0	424.1	23.6	145.0	168.6	161.7	431.0	592.7
Miscellaneous	1972 9.1	21.7	30.8	3.6	13.5	17.1	12.7	35.2	47.9
	1973 10.0	25.6	35.6	4.0	13.5	17.5	14.0	39.1	53.1
	1974 12.9	38.0	50.9	4.4	13.5	17.9	17.3	51.5	68.8
Capital items charged to operating expenses	1972 —	320.5	320.5	—	—	—	—	320.5	320.5
	1973 —	364.1	364.1	—	—	—	—	364.1	364.1
	1974 —	436.2	436.2	—	—	—	—	436.2	436.2
Total, manufacturing	1972 829.1	2,119.2	2,948.3	251.5	1,405.2	1,656.7	1,080.6	3,524.4	4,605.0
	1973 1,037.4	2,468.4	3,505.8	256.0	1,537.6	1,793.6	1,293.4	4,006.0	5,299.4
	1974 1,356.3	3,140.6	4,496.9	280.2	1,658.1	1,938.3	1,636.5	4,798.7	6,435.2

14.21 Capital and repair expenditures for certain economic sectors, 1972-74¹ (million dollars) (concluded)

Type of enterprise and year	Capital			Repair			Capital and repair		
	Con- struc- tion	Ma- chinery and equip- ment	Total	Con- struc- tion	Ma- chinery and equip- ment	Total	Con- struc- tion	Ma- chinery and equip- ment	Total
MINING									
Metal mines ^a	1972 345.7	313.0	658.7	26.4	242.4	268.8	372.1	555.4	927.5
	1973 326.0	251.4	577.4	42.0	275.2	317.2	368.0	526.6	894.6
	1974 361.6	173.1	534.7	44.5	289.3	333.8	406.1	462.4	868.5
Iron mines	1972 127.6	150.6	278.2	9.1	82.8	91.9	136.7	233.4	370.1
	1973 136.5	136.5	273.0	10.7	101.1	111.8	147.2	237.6	384.8
	1974 117.6	51.7	169.3	12.1	107.5	119.6	129.7	159.2	288.9
Other metal mines	1972 218.1	162.4	380.5	17.3	159.6	176.9	235.4	322.0	557.4
	1973 189.5	114.9	304.4	31.3	174.1	205.4	220.8	289.0	509.8
	1974 244.0	121.4	365.4	32.4	181.8	214.2	276.4	303.2	579.6
Petroleum and gas ^a	1972 729.3	91.2	820.5	106.8	35.6	142.4	836.1	126.8	962.9
	1973 877.6	84.3	961.9	108.7	40.0	148.7	986.3	124.3	1,110.6
	1974 1,130.1	196.7	1,326.8	113.7	49.5	163.2	1,243.8	246.2	1,490.0
Other mining ^a	1972 59.8	81.3	141.1	6.2	116.4	122.6	66.0	197.7	263.7
	1973 65.0	80.0	145.0	6.4	116.3	122.7	71.4	196.3	267.7
	1974 105.9	111.0	216.9	6.5	125.0	131.5	112.4	236.0	348.4
Total, mining	1972 1,134.8	485.5	1,620.3	139.4	394.4	533.8	1,274.2	879.9	2,154.1
	1973 1,268.6	415.7	1,684.3	157.1	431.5	588.6	1,425.7	847.2	2,272.9
	1974 1,597.6	480.8	2,078.4	164.7	463.8	628.5	1,762.3	944.6	2,706.9
UTILITIES									
Electric power	1972 1,135.2	618.5	1,753.7	102.9	84.1	187.0	1,238.1	702.6	1,940.7
	1973 1,498.8	695.0	2,193.8	137.8	68.6	206.4	1,636.6	763.6	2,400.2
	1974 1,736.5	804.9	2,541.4	148.1	81.4	229.5	1,884.6	886.3	2,770.9
Gas distribution	1972 107.5	34.2	141.7	13.4	7.2	20.6	120.9	41.4	162.3
	1973 101.3	34.9	136.2	13.6	6.1	19.7	114.9	41.0	155.9
	1974 111.6	33.4	145.0	14.9	6.6	21.5	126.5	40.0	166.5
Railway transport	1972 191.3	156.0	347.3	193.0	304.4	497.4	384.3	460.4	844.7
	1973 230.7	129.3	360.0	211.0	298.2	509.2	441.7	427.5	869.2
	1974 287.7	153.6	441.3	248.3	372.5	620.8	536.0	526.1	1,062.1
Urban transit	1972 49.8	22.4	72.2	11.3	32.7	44.0	61.1	55.1	116.2
	1973 57.2	39.0	96.2	12.6	29.9	42.5	69.8	68.9	138.7
	1974 107.3	53.9	161.2	15.4	33.3	48.7	122.7	87.2	209.9
Water transport and services	1972 73.3	52.7	126.0	10.9	28.7	39.6	84.2	81.4	165.6
	1973 55.6	92.2	147.8	9.4	29.5	38.9	65.0	121.7	186.7
	1974 58.6	51.3	109.9	10.6	29.1	39.7	69.2	80.4	149.6
Motor transport	1972 15.8	120.3	136.1	4.4	125.1	129.5	20.2	245.4	265.6
	1973 17.0	139.7	156.7	4.2	120.2	124.4	21.2	259.9	281.1
	1974 21.2	147.9	169.1	5.3	124.5	129.8	26.5	272.4	298.9
Grain elevators	1972 6.8	8.0	14.8	4.5	4.4	8.9	11.3	12.4	23.7
	1973 9.8	9.7	19.5	4.8	5.4	10.2	14.6	15.1	29.7
	1974 12.0	14.6	26.6	4.7	5.3	10.0	16.7	19.9	36.6
Telephone and telegraph	1972 308.8	594.7	903.5	64.3	284.8	349.1	373.1	879.5	1,252.6
	1973 362.3	689.0	1,051.3	72.7	297.8	370.5	435.0	986.8	1,421.8
	1974 417.8	875.8	1,293.6	81.7	331.0	412.7	499.5	1,206.8	1,706.3
Broadcasting ^a	1972 26.5	68.9	95.4	3.6	5.8	9.4	30.1	74.7	104.8
	1973 39.6	59.9	99.5	3.6	6.5	10.1	43.2	66.4	109.6
	1974 40.3	72.9	113.2	4.3	6.7	11.0	44.6	79.6	124.2
Other utilities ⁷	1972 442.0	159.2	601.2	19.5	119.3	138.8	461.5	278.5	740.0
	1973 365.2	407.3	772.5	23.5	138.2	161.7	388.7	545.5	934.2
	1974 267.5	317.1	584.6	26.5	153.1	179.6	294.0	470.2	764.2
Capital items charged to operating expenses	1972 —	36.8	36.8	—	—	—	—	36.8	36.8
	1973 —	42.9	42.9	—	—	—	—	42.9	42.9
	1974 —	47.7	47.7	—	—	—	—	47.7	47.7
Total, utilities	1972 2,357.0	1,871.7	4,228.7	427.8	996.5	1,424.3	2,784.8	2,868.2	5,653.0
	1973 2,737.5	2,338.9	5,076.4	493.2	1,000.4	1,493.6	3,230.7	3,339.3	6,570.0
	1974 3,060.5	2,573.1	5,633.6	559.8	1,143.5	1,703.3	3,620.3	3,716.6	7,336.9

¹Actual expenditures 1972; preliminary actual 1973; intentions 1974.²Includes expenditures for heavy water plants.³Capital construction expenditures include on-property exploration and development but exclude outside or general exploration.⁴Includes expenditures on facilities related to petroleum and gas wells and extraction of petroleum from shales or sands, natural gas processing plants and contract drilling for petroleum and gas. Capital construction expenditures include exploratory and development drilling but exclude geological and geophysical expenditures.⁵Includes coal mines, asbestos, gypsum, salt, miscellaneous non-metal (incl. potash) mines and quarrying.⁶Includes community antenna television and satellite communication systems.⁷Includes air transport, warehousing, oil and gas pipelines, toll highways and bridges, and provincial and private water systems.

14.22 Capital and repair expenditures, by province, 1972-74¹ (million dollars)

Province or territory and year	Capital			Repair			Capital and repair		
	Con- struc- tion	Ma- chinery and equip- ment	Total	Con- struc- tion	Ma- chinery and equip- ment	Total	Con- struc- tion	Ma- chinery and equip- ment	Total
Newfoundland	1972 413	194	607	45	86	131	458	280	738
	1973 418	197	615	53	104	157	471	301	772
	1974 453	173	626	61	115	176	514	288	802
Prince Edward Island	1972 53	19	72	14	8	22	67	27	94
	1973 91	24	115	17	8	25	108	32	140
	1974 98	31	129	20	9	29	118	40	158
Nova Scotia	1972 397	216	613	91	88	179	488	304	792
	1973 527	270	797	96	104	200	623	374	997
	1974 601	295	896	108	113	221	709	408	1,117
New Brunswick	1972 299	188	487	74	82	156	373	270	643
	1973 404	196	600	90	88	178	494	284	778
	1974 518	252	770	103	105	208	621	357	978
Quebec	1972 3,142	1,682	4,824	604	802	1,406	3,746	2,484	6,230
	1973 3,684	2,033	5,717	674	877	1,551	4,358	2,910	7,268
	1974 4,315	2,226	6,541	749	944	1,693	5,064	3,170	8,234
Ontario	1972 5,253	2,984	8,237	1,023	1,512	2,535	6,276	4,496	10,772
	1973 6,086	3,496	9,582	1,151	1,587	2,738	7,237	5,083	12,320
	1974 6,990	4,126	11,116	1,291	1,728	3,019	8,281	5,854	14,135
Manitoba	1972 621	349	970	133	144	277	754	493	1,247
	1973 745	404	1,149	143	156	299	888	560	1,448
	1974 801	509	1,310	168	173	341	969	682	1,651
Saskatchewan	1972 439	385	824	154	175	329	593	560	1,153
	1973 535	430	965	171	184	355	706	614	1,320
	1974 590	540	1,130	189	210	399	779	750	1,529
Alberta	1972 1,654	729	2,383	326	289	615	1,980	1,018	2,998
	1973 1,921	944	2,865	351	313	664	2,272	1,257	3,529
	1974 2,265	1,218	3,483	390	361	751	2,655	1,579	4,234
British Columbia	1972 1,937	958	2,895	338	546	884	2,275	1,504	3,779
	1973 2,231	1,106	3,337	411	621	1,032	2,642	1,727	4,369
	1974 2,591	1,309	3,900	461	690	1,151	3,052	1,999	5,051
Yukon Territory and Northwest Territories	1972 262	44	306	16	24	40	278	68	346
	1973 317	72	389	18	29	47	335	101	436
	1974 367	50	417	23	32	55	390	82	472
Canada	1972 14,470	7,748	22,218	2,818	3,756	6,574	17,288	11,504	28,792
	1973 16,959	9,172	26,131	3,175	4,071	7,246	20,134	13,243	33,377
	1974 19,589	10,729	30,318	3,563	4,480	8,043	23,152	15,209	38,361

¹Actual expenditures 1972; preliminary actual 1973; intentions 1974.**Sources**

14.1 - 14.3 Central Mortgage and Housing Corporation.

14.4 - 14.9 Housing and Families Section, Census Branch, Statistics Canada.

14.10 - 14.22 Construction Division, Industry Statistics Branch, Statistics Canada.

Chapter 15

Transportation

15.1 Government promotion and regulation

The federal government plays a twofold role in developing transportation services. One is promotional — to ensure the growth and development of the kind of transportation appropriate to the times; the other is regulatory and includes economic regulation of rates and services and also the application of technical regulations to meet safety requirements. The building of canals from the time of Confederation to the construction of the St. Lawrence Seaway; underwriting railway development and branch-line extension; establishing Air Canada; investing in airports and aeronautical installations; and building the Trans-Canada Highway fall within the first category as the stated aim of each was to promote adequate transportation facilities.

The Ministry of Transport and the various Crown agencies reporting to Parliament through the Minister of Transport have jurisdiction over canals, harbours, shipping, civil aviation and interprovincial and international railways. Jurisdiction over for-hire interprovincial or international highway transport also rests with the federal government but these powers are at present exercised by the provincial highway transport boards as provided for in the federal Motor Vehicle Transport Act of 1954 (RSC 1970, c.M-14).

Railway regulation was developed in a period when railways enjoyed a virtual monopoly of transport in the country. Measures to protect the public against excessive charges, unjust discrimination and other objectionable monopoly practices, together with measures to ensure safe operations, have over the years subjected railways to the most comprehensive regulation of any Canadian industry. However, the rapid growth of road, air and pipeline services has ended the monopoly situation for a large part of the total traffic available and forced the railways into a highly competitive situation.

The National Transportation Act (RSC 1970, c.N-17) defines a national transportation policy for Canada with a view to achieving an economic and efficient transportation system making the best use of all available modes of transportation at the lowest total cost. The Act established the Canadian Transport Commission (CTC) to carry out the functions formerly performed by the Board of Transport Commissioners for Canada, the Air Transport Board and the Canadian Maritime Commission. In addition, it created a framework within which the CTC might regulate interprovincial and international motor transport as well as the transportation by pipeline of commodities other than oil and gas.

In general, the purpose of the Act is to develop the transportation industry and at the same time protect the public against excessive or discriminatory charges by competition between forms of transport rather than by regulation and control. The railways are relieved of some of the more onerous and outdated restrictions on their freedom to meet competition. On the other hand, a shipper who has no practical alternative to rail shipment can apply to the Commission to have a maximum rate fixed for transporting his goods. The Act also provides a procedure to allow railways, subject to explicit safeguards in the public interest, to abandon lines and withdraw passenger services where they are no longer needed.

The Canadian Transport Commission has established several committees, five of which, Railway Transport, Air Transport, Water Transport, Commodity Pipeline Transport, and Telecommunications, exercise the Commission's powers in their respective industries. The Commission is a court of record; its decisions are binding within its jurisdiction and may be reviewed only by appeal to the Supreme Court of Canada on a question of law or jurisdiction with leave of that Court, or by the Governor in Council. However, a party to a licence application under the Aeronautics Act or the Transport Act may appeal to the Minister of Transport.

The Commission has jurisdiction under several acts, including the Railway Act, the Aeronautics Act and the Transport Act, over transportation by railway, by air and by inland water, and over communication by telephone and telegraph.

Under the Railway Act the Commission has jurisdiction over construction, maintenance and operation of railways that are subject to the legislative authority of the Parliament of Canada, including matters of engineering, location of lines, crossings and crossing protection, safety of train operation, operating rules, investigation of accidents, accommodation for traffic and facilities for service, abandonment of operation and uniformity of railway accounting. The

Commission also has certain jurisdiction over telephones and telegraphs, the tolls for which were re-defined by an amendment to the Railway Act in 1970 to include private wire, Telex and broadband exchange services operated by telecommunication carriers under federal jurisdiction. The jurisdiction includes regulation of the telephone tolls of Bell Canada because of the interprovincial nature of the company's operations and tolls for the use of international bridges and tunnels.

Except for certain statutory rates, and subject to certain powers of the Commission to deal with rates that it finds to be contrary to public interest, the railways are free to charge rates as they wish. However, rates must be compensatory, as defined in the Railway Act, and the Commission may prescribe tolls for captive shippers if such tolls take undue advantage of a monopoly situation favouring the railways.

The Commission is responsible for the economic regulation of commercial air services in Canada and is also required to advise the Minister of Transport on matters relating to civil aviation. The regulatory function relates to Canadian air services within Canada and abroad and to foreign air services operating in and out of Canada. It involves licensing all such services and regulating the licensees. The Commission issues regulations dealing with the classification of air carriers and commercial air services, accounts, records and reports, traffic tolls and tariffs, and various other matters. All regulations, rules and orders issued by the former Air Transport Board continue in force until repealed or amended by the Commission.

The CTC takes an active part in the work of the International Civil Aviation Organization and, when appropriate, undertakes bilateral negotiations for the exchange of traffic rights. In 1973 Air Canada and CP Air were Canada's designated international scheduled carriers.

Under the Transport Act, the Commission entertains applications for licences for ships to transport goods or passengers for hire or reward between places in Canada on the Great Lakes and on the Mackenzie and Yukon rivers, except goods in bulk on waters other than the Mackenzie River. Before granting a licence, the Commission studies the need for such transport and afterward retains regulatory powers over tolls to be charged.

The Commission is authorized to investigate complaints about proposed tariffs, under terms of the Pilotage Act, and about existing tariffs under the St. Lawrence Seaway Authority Act, and to make recommendations to the appropriate body. Under the Shipping Conferences Exemption Act, ocean carriers who are members of a shipping conference must file copies of their agreements, tariffs and other such documents with the Commission.

The CTC also administers subsidies paid by the federal government for maintaining certain coastal and inland water shipping services. Table 15.1 shows the net amount of these subsidies paid in the year ended March 31, 1973.

15.2 Rail transport

Canadian railway transport is dominated by two transcontinental systems, supplemented by a number of regional railways. The government owned Canadian National Railway System is the country's largest public utility and operates the longest track mileage in Canada. It serves all 10 provinces as well as the Great Slave Lake area of the Northwest Territories. In addition it operates a highway transport service, a fleet of coastal steamships, a chain of large hotels and resorts, a telecommunications service, and, as an autonomous subsidiary (Air Canada), a scheduled Canadian and international air service. The Canadian Pacific Railway Company is a joint-stock corporation operating a railway service in eight provinces. Similar to and competitive with the Canadian National Railway System, it is a multi-transport organization with a fleet of inland and ocean-going vessels as well as coastal vessels, a fleet of trucks, a chain of year-round and resort hotels, a telecommunications service, and a domestic and foreign airline service. The British Columbia Railway operates over a 1,000-mile route from North Vancouver to Fort Nelson in northeastern British Columbia. The Northern Alberta Railway, jointly owned by CP and CN, serves the area north of Edmonton with a 900-mile system. Northern Ontario is served by the provincially owned Ontario Northland Railways with a 600-mile system stretching from North Bay to Moosonee, and by the privately owned Algoma Central Railway operating over 300 miles of line between Sault Ste Marie and Hearst.

In addition, a US-Canada passenger service, inaugurated by the National Railroad Passenger Corporation (AMTRAK), is operated between Seattle, Wash. and Vancouver, BC and between Montreal, Que. and Washington, DC via New York City, Springfield, Mass., and resort areas in New Hampshire and Vermont.

The largest contributors to Canada's total 1972 railway revenue were Canadian National (52.4%) and Canadian Pacific (36.6%). The Quebec North Shore and Labrador Railway, built to transport ore and concentrates from the iron mines of the Schefferville and Wabush areas of Quebec and Labrador to water transportation facilities on the St. Lawrence River, accounted for 1.8% of the revenues. Other railways contributing 1.0% or more of the total revenue figure were the British Columbia Railway (2.3%) and the Ontario Northland Railways (1.1%).

In recent years the railways have faced strong competition from highway and air transport for the movement of people and goods. Still indispensable for carrying bulk commodities, railways are necessary to the development of natural resources located in isolated areas of Canada. Only pipelines have competed with railways in this respect by providing an economical means of transporting the products of oil and gas fields for long distances overland.

The rapid growth of containerization in recent years has made the integration of the services of railway, highway, shipping and other modes of transport of growing importance. However, because Canada's two major railways are already involved in several forms of transportation, they are in an excellent position to meet the challenge of this and other trends appearing in the transportation industry. Canadian railways have evolved over the past century from a position of virtual monopoly in the movement of goods and people by rail, through a highly competitive stage to the present system of co-operation and co-ordination with other modes of transport. The latter approach permits each type of transport to perform the particular function it can do best, thus establishing the most effective and economical system of transportation services possible.

15.2.1 Government aid

In the 19th century governments promoted the building of railways to provide transportation and communications across Canada. Private developers received assistance in the form of land grants, cash payments, loans or purchase of shares. Since the formation of the Canadian National Railway System, its debenture issues, except those for rolling-stock, have been guaranteed by the federal government. Provincial governments had guaranteed the bonds of some lines that were later incorporated in the CNR System. As these mature or are called, they are paid off by the CNR in large measure through funds raised by issuing new bonds guaranteed by the federal government. At December 31, 1973, railway bonds guaranteed by the Government of Canada amounted to \$803 million.

The National Transportation Act provides for normal railway subsidy payments of \$110 million for 1967, declining by \$14 million a year, the last payment being \$12 million for 1974. The Act also allows railways to file claims and receive specific payments for losses incurred on branch lines and passenger-train services operated in the public interest. Total payments of \$125.5 million for 1972 represented specific payments to the two major railways, exceeding and replacing their shares of the normal subsidy. Claims for 1973 must be filed by June 30, 1974.

Truckers receive federal assistance through freight rate subsidies similar to the subsidies to railways provided under the Maritime Freight Rate Act. Since 1969 the Atlantic Region Freight Assistance Act has allowed subsidies on goods moved from Nova Scotia, Prince Edward Island, New Brunswick, the island of Newfoundland, and Quebec south of the St. Lawrence River and east of Highway 23 to points in Canada outside that territory. In October 1970 assistance was authorized for goods moved by highway transport within that area as well.

15.2.2 Rail transport statistics

Track mileage and rolling-stock. Total railway track mileage in Canada has changed little since the 1920s. Table 15.2 illustrates the historical development of first main track mileage from 17,657 miles in 1900 to 38,805 in 1920 and to 44,025 in 1972. The same Table presents statistics on main and other types of track mileage by province and territory and that operated by Canadian carriers in the US for the years 1968-72.

Table 15.3 compares freight and passenger equipment in operation in 1971 and 1972 with that in use in 1960. Privately owned cars, which include cars owned by non-rail industrial firms such as oil, chemical and railway car leasing companies that furnish freight cars to, or on behalf of, any railway line, have increased greatly in number. The figures given of rolling-stock in operation do not reflect, however, the offsetting trend toward larger, more efficient cars and locomotives or the steady improvement in speed of movement facilitated by modernized han-

dling and terminal services. Each year hundreds of units, particularly freight cars, are converted and modified to make them suitable for specific types of traffic or are replaced by special-purpose equipment designed for distinctive hauling jobs. The average capacity of all freight cars was 59.9 tons in 1972 compared with 51.4 tons in 1960. Also, although the number of diesel-electric locomotives in service has remained fairly constant over this period, an extensive program of power upgrading has been followed by the railway companies.

Revenue freight. Total tonnage of freight carried by all common carrier railways (including national loadings and receipts from US connections) in 1971 and 1972 is shown in Table 15.4 under the commodity structure adopted in 1970 based on Statistics Canada's Standard Commodity Classification. Although there is some loss of continuity with previous data, this new commodity breakdown permits improved comparisons with other series on water transport, imports, exports, etc., which are already based on the Standard Commodity Classification.

Capital structure and finance. Tables 15.5 - 15.8 give information on capital investment in road and equipment, and on operating revenues, expenses and net income of all common carrier railways operating in Canada, except that of the Cartier Railway which is not available. In transportation statistics a distinction is made between expenditures and expenses. In the following data, the term "expenses" refers to the expenses of furnishing rail transportation service and of operations incident thereto, including maintenance and depreciation of the plant used in such service.

The capital structure of the Canadian National Railway System is presented in Table 15.6 and financial details of operations in both Canada and the United States in Table 15.7. Revenues and expenses include those of express and commercial communications and highway transport (rail) operations. Tax accruals and rents are charged to operating expenses.

Total operating revenues and expenses of common carrier railways operating in Canada (except the Cartier Railway) continued to rise, both reaching peak levels in 1972; increases over 1971 amounted to 7.5% and 8.5%, respectively (as calculated from Table 15.8). However, net operating revenues showed a decrease of 8.8% to \$98.0 million.

15.3 Road transport

The federal government establishes motor vehicle safety standards, while registration of motor vehicles and regulation of motor vehicle traffic lie with the legislative jurisdiction of the provincial and territorial governments. An outline of legislation, as well as summaries of motor vehicle and traffic regulations common to all provinces and territories are presented in the following Sections.

15.3.1 Federal safety regulations

The general objective of the Motor Vehicle Safety Act (RSC 1970, c.26, 1st Supp.) is to establish mandatory safety standards for new motor vehicles to protect people from injuries or death and from the hazardous effects of exhaust and noise emissions. The legislation applies to all new motor vehicles and components manufactured in or imported into Canada, and requires manufacturers to issue notices of safety defects in a prescribed manner. The safety of vehicles in use continues to be a provincial responsibility discharged under existing provincial legislation.

The safety regulations currently include 38 standards relating to the design and performance of passenger cars, trucks, buses, motorcycles, competition motorcycles, minibikes and trailers; six standards limiting motor vehicle exhaust, evaporative and noise emissions; and 11 standards applying to snowmobiles. These standards will be reviewed regularly and additions or revisions incorporated to keep pace with engineering or technical advances. The regulations require all Canadian motor vehicle manufacturers or distributors to apply the national safety mark, accompanied by a label certifying compliance with all applicable federal motor vehicle safety standards, to every classified vehicle produced after January 1, 1971. Vehicles imported for commercial or individual use must comply with the Act and Regulations.

15.3.2 Motor vehicle and traffic regulations

Operators licences. The operator of a motor vehicle must be over a specified age, usually 16 years (17 in Newfoundland and generally 16 in Alberta and New Brunswick but 18 for certain classes of motor vehicle), and must carry a licence, obtainable in most provinces only after

prescribed qualification tests. In New Brunswick the holder of an out-of-province licence must be 18. A licence is renewable annually in Saskatchewan and the Northwest Territories and annually at the end of the licensee's birth month in Manitoba; in Alberta it is renewable every five years but annually where a medical report is required; in British Columbia it is renewable every five years expiring on the licensee's birth date and classified according to the operations by the licensee; in Quebec operators and chauffeurs permits are renewable every two years on the holder's birthday; in New Brunswick a licence is renewable every two years and expires at the end of the licensee's birth month; in Newfoundland, Ontario and the Yukon Territory a licence is issued on a three-year basis and expires on the licensee's birth date; and in Nova Scotia a licence is issued on a three-year basis and expires at the end of the licensee's birth month. Prince Edward Island is phasing into a three-year cycle.

Special licences are required for chauffeurs in all provinces except Newfoundland and British Columbia. In the latter province, although no special chauffeur's licence is issued, all drivers' licences are classified according to demonstrated skills at the time of licensing. There are six classes of licence, one for motorcycles and five for other vehicles. Special tests are given to taxi drivers, bus drivers and drivers of single vehicles over 24,000 lb. GVW and tractor-trailer combinations. In the Northwest Territories persons under 18 but over 16 may obtain a chauffeur's licence at the discretion of the Registrar, on receipt of a letter of approval from the RCMP and a letter from the employer verifying that the licence is necessary for employment. In some provinces a motorcycle operator is required to pass a special examination and have his driver's licence endorsed authorizing him to operate this class of vehicle or, if he has no driver's licence, he may be issued a licence to operate only a motorcycle. In Alberta a person under 16 but over 14 years of age is permitted to operate a motorcycle with a piston displacement of not more than 100 cc. In Quebec all snowmobile operators must hold valid permits issued for that purpose. Operators or chauffeurs permits issued under the Highway Code are considered valid for snowmobiles. Special restrictions apply to minors; 10 is the minimum age for obtaining a permit and operating conditions and locations are controlled.

Motor vehicle regulations. Motor vehicles and trailers are usually registered annually with the payment of specified fees. Most motor vehicles carry a registration plate on the front and one on the rear; trailers carry one on the rear. In Alberta passenger cars, vehicles licensed for Drive-ur-self service and vehicles operated by motor vehicle dealers for demonstration or resale all display two plates. All other cars or trucks have one rear licence plate.

In most provinces registration plates stay with the vehicle when it is sold, but in Quebec, Manitoba, Saskatchewan, Alberta and British Columbia the owner retains them. In the Northwest Territories the registration expires when a vehicle changes hands. The owner notifies the Registrar, returns the number plates and the new owner applies to register the transferred vehicle in his name. In Nova Scotia vehicles change hands by due process of law and title must be secured before plates and permits are issued. A change of ownership must be recorded with the registration authority.

Exemption from registration is granted for a specified period, usually at least 90 days, although the maximum in Quebec is three months for non-residents. In Nova Scotia, a non-resident full-time student residing temporarily in the province may receive, without fee, a driver's licence, plates and permit in exchange for the same valid out-of-province documents; the latter are returned to his home province, state or territory. In Ontario the exemption period is six consecutive months for non-residents from other provinces and three for those with vehicles registered outside Canada. The regulations in Manitoba allow residents to use registration plates from other jurisdictions for 90 days; visitors are exempt from registration if the vehicle is not used for business; and an out-of-province student is exempt if his vehicle is properly registered in his home jurisdiction and he obtains a student sticker for the vehicle's windshield. In Saskatchewan an out-of-province student is exempt for the school year provided the vehicle is properly registered in his home jurisdiction and, if necessary, he can prove financial responsibility. The Alberta regulations permit non-residents to operate vehicles currently registered in their home province or in the United States for six months; the period is extended to a school year for out-of-province students whose vehicles carry non-resident student stickers. In British Columbia the exemption period is one month; tourists are allowed six months and out-of-province students, a school year, if the vehicles are properly registered in their home jurisdictions.

Safety regulations require vehicles to meet certain mechanical and braking standards and stipulate that equipment include non-glare headlights, a proper rear light, a muffler, a windshield wiper, a rear-vision mirror and a horn. All motor vehicles and trailers registered in Nova Scotia must pass an annual safety inspection at an official inspection station. A vehicle which has been sold may not be registered to the new owner unless it passed an inspection while registered to the seller during the past year. Newfoundland requires a certificate of mechanical fitness before renewal of registration for vehicles two years old or more. In Ontario, Manitoba and Newfoundland a certificate of mechanical fitness is required before a vehicle sold on the second-hand market can be issued a permit for operation. At the time of sale, used car dealers must certify that the vehicle complies with the provincial equipment requirements. In Alberta the dealer must issue a certificate indicating whether or not the vehicle complies with the prescribed equipment regulations.

Traffic regulations. In all provinces and territories, vehicles keep to the right-hand side of the road. Everywhere motorists are required to observe traffic signs, lights, etc., placed at strategic points on highways and roads. The speed limit in Prince Edward Island, unless otherwise posted, is 60 mph in daytime and 55 at night; in Manitoba the basic speed limit is 60 mph in daytime and 50 at night unless otherwise posted — speed limits may be raised to 70 mph or modified in semi-built-up areas; in Alberta it is 60 mph in daytime and 50 at night, with the exception of a few selected sections of four-lane highway where higher speeds may be posted; in Nova Scotia the limit is a “reasonable and prudent” speed, with a maximum of 60 mph except where 65 mph is authorized; in Newfoundland the maximum speed is 60 mph unless otherwise posted, but some sections have a 50 mph limit at night; in New Brunswick maximum speeds vary from 50 to 60 mph depending on the type of highway; and in Ontario and Quebec maximum speeds vary from 50 to 70 mph depending on the type of highway. In the other provinces the maximum speed permitted is normally 50 mph; in Saskatchewan and British Columbia higher speed limits are posted where they are in effect. In the Yukon Territory the speed limit for all vehicles is 60 mph, unless otherwise posted. In the Northwest Territories the highway limit is 60 mph for all vehicles, day or night, except as otherwise posted, and in municipalities it is 30 mph except as posted. Slower speeds are required in cities, towns and villages, at road intersections, railway crossings or at other places or times where the view of the highway for a safe distance ahead is in any way obscured. In Nova Scotia, British Columbia and the Northwest Territories slower speeds are also required in school zones and when passing public playgrounds. Most provinces require vehicles to stop when a school bus is stopped to load or discharge children. Truck speed limits are at least five miles an hour below automobile speed limits, although in Manitoba, Northwest Territories, Prince Edward Island, Saskatchewan and British Columbia they are the same as for passenger vehicles. In most provinces accidents resulting in personal injury or property damage in excess of \$200 (\$100 in Quebec) must be reported to a police officer (in Nova Scotia to the Registrar of Motor Vehicles or to a police officer; in Quebec to a police officer or to the Motor Vehicle Bureau) and a driver involved must not leave the scene of an accident until he has rendered all possible aid and disclosed his name to the injured party. A similar regulation applies to snow vehicle drivers in Quebec and New Brunswick and to any off-highway vehicle driver in Alberta.

Driver licensing controls. All provinces and territories impose penalties for infractions of driving regulations, ranging from fines for minor infractions to suspension of the operator's driving permit, impounding of vehicle or imprisonment for more serious infractions. In most provinces penalties have been linked to a driver-improvement program, the aim of which is to correct faulty driving habits, not to take drivers off the road. The most common driver-improvement program includes the demerit-point system. In Prince Edward Island a driver who is suspended under the demerit-point system must take a driver-improvement course as a condition of reinstatement.

Safety responsibility legislation. Each province has enacted safety responsibility legislation. In general, laws provide for the automatic suspension of the driver's licence and/or motor vehicle registration of a person convicted of a serious offence (impaired driving, driving under suspension, dangerous driving, etc.) or a person whose uninsured vehicle is involved directly or indirectly in an accident resulting in damage in excess of \$200 or injury or death to any person (in Manitoba the amount is \$100 and in Nova Scotia, \$50; in Prince Edward Island suspensions depend on the circumstances of the accident). In Saskatchewan, Alberta, Quebec,

New Brunswick and Nova Scotia, if a judgment is rendered for damages against the driver or owner, the driver's licence and registration remain suspended until the judgment is satisfied and proof of financial responsibility for the future is filed. In Saskatchewan and the Northwest Territories uninsured motor vehicles may be impounded following an accident of any consequence, i.e. an accident resulting in personal injury or death, or property damage in excess of \$200. Under the Quebec Code of Civil Procedure, before judgment the plaintiff may seize the motor vehicle which has caused him damage, whatever the amount of property damage, whether covered for third-party insurance or not. In British Columbia, if a judgment is rendered against a driver and not satisfied, the driver's licence may be suspended until reinstated at the discretion of the Superintendent of Motor Vehicles. In the Yukon Territory an inadequately insured vehicle may be impounded if it is involved in an accident, regardless of the property damage.

In Ontario, Manitoba, Alberta and British Columbia the non-resident motorist is not required to carry or produce any form of proof of insurance. In Ontario the only persons required to file a Certificate of Insurance are those indebted to the Motor Vehicles Accident Claims Fund. If asked by police, registered owners in Nova Scotia must show proof of financial responsibility or face possible prosecution. Conviction results in suspension of both driver's licence and registration until proof of financial responsibility is filed. In Saskatchewan, British Columbia, Alberta (here off-highway vehicles used in a public place must also be insured) and Manitoba, a compulsory insurance plan is in effect for residents, and drivers may at any time be required to show proof of financial responsibility on demand of a peace officer. The British Columbia compulsory insurance law requires that a person who has a driver's licence must also have a driver's insurance certificate. The insurance certificate runs from birthday to birthday, on an annual renewal basis. It costs \$10 a year for a driver with a point penalty record of less than six points. Drivers with six points or more pay surcharges according to the number of point penalties in their driving records. In the Northwest Territories proof of insurance must be supplied before vehicle licence is issued, and when the insurance expires or is cancelled vehicle licence plates must be returned to the Registrar of Motor Vehicles. In both the Yukon Territory and the Northwest Territories certain areas may be exempted from the insurance requirement on order of the Commissioner. In the Northwest Territories public liability and property damage insurance is compulsory for all vehicles operating on the highways regardless of where the vehicle is registered. In Quebec snowmobiles are required to carry insurance in the amount of \$35,000 to cover liability deriving from the use of such vehicle.

Unsatisfied judgment fund. All provinces and territories, except Manitoba, Saskatchewan, the Northwest Territories and the Yukon Territory, have enacted legislation providing for the establishment of a fund, frequently called an unsatisfied judgment fund (in New Brunswick, the Unsatisfied Judgment; in Ontario and Alberta, the Motor Vehicle Accident Claims Fund; and in British Columbia, the Traffic Victims' Indemnity Fund). Judgments awarded for damages arising out of motor vehicle accidents which cannot be collected by the ordinary process of law are paid out of this fund. In Newfoundland, Prince Edward Island, Nova Scotia, Quebec and British Columbia the fund is maintained by insurance companies. In all the other provinces, except Saskatchewan and Manitoba where insurance is compulsory, the funds are obtained by collecting an annual fee from the registered owner of every motor vehicle or from every person to whom a driver's licence is issued. The fee usually does not exceed \$1 a year; in New Brunswick the fee is \$3 a year; in Ontario a fee of \$40 is paid by the uninsured motorist (in the absence of the fee being paid, the uninsured, if apprehended, is liable to a fine) and, in addition, the fund is subsidized by a \$1 annual charge from each licensed driver.

Some provincial legislation covers payment of judgments in hit-and-run accidents. When these occur, if neither the owner nor the driver can be identified, action may be taken against the Registrar of Motor Vehicles (the Minister of Finance in Newfoundland, the Superintendent of Insurance in Ontario and the Administrator of the Motor Vehicle Accident Claims Fund in Alberta); any judgment secured against the responsible authority is paid out of the fund. The amount that can be paid out of the fund on one judgment is limited. In Newfoundland and Nova Scotia the limits are \$10,000 for one person, \$20,000 for two or more persons injured in one accident and \$5,000 for property damage. In Nova Scotia and New Brunswick the limit is \$35,000 in respect of any one accident. In Prince Edward Island and Quebec the limit is \$35,000 for all damages in the same accident, subject to a deduction of \$200 from all

damage to the property of others; damages resulting in bodily injury or death are, up to \$30,000, payable by priority over damages to property and the latter are, up to \$5,000, payable by priority over the former out of the amount of any insurance or other guarantee of indemnity. In British Columbia the limit is based on the single amount of \$50,000 for any one accident with the provision that not more than \$5,000 may be paid on a property damage claim until injury claims up to \$45,000 have been satisfied; the \$50,000 limit exists for hit-and-run accidents but does not apply to payments for property damage. In Alberta the limit is \$50,000 for death or personal injury to one or more persons and \$5,000 for damage to property, subject to a limit of \$50,000 in any one accident; if, in one accident, claims result from bodily injury to or death of one or more persons and loss of or damage to property, claims arising out of bodily injury or death have priority over claims resulting from loss of or damage to property to the amount of \$45,000, and claims arising out of loss of or damage to property have priority over claims resulting from bodily injury or death to the amount of \$5,000. In Ontario the limits are \$50,000, inclusive of \$5,000 for any property damage claim. Many small claims are handled by the Motor Vehicle Accident Claims Branch (under the Ministry of Consumer and Commercial Relations), subject to a \$50 franchise clause in respect of property damage, but the procedure is such that claims can be settled without resort to litigation. The Minister has the power to act if the defendant is an infant or the defendant owner or driver is deceased.

15.3.3 Road transport statistics

Roads and streets. At the end of 1971 Canada had 315,821 miles of highways and roads under federal or provincial jurisdictions and 202,497 miles of roads and streets under municipal jurisdiction (Table 15.9). Most of this mileage is in the more populated sections. Roads built by logging, pulp and paper, and mining companies provide some access to remote communities but large areas of most provinces and the territories are still very sparsely settled and are virtually without roads.

Table 15.10 presents expenditure data for all roads and streets in 1970-71 and 1971-72. In 1971-72 total expenditures equalled \$2,535 million. Construction expenditures increased 21.0% and maintenance and administration costs rose by 10.4%.

Motor vehicles. Registrations continue to increase yearly, a record of 9.7 million being reached in 1972. Of that total, 7.4 million were passenger cars. Registrations by province are given in Table 15.11 and types of vehicles registered by province in Table 15.12.

The taxation of motive fuels, motor vehicles, garages, drivers, chauffeurs, etc., is an important source of provincial government revenue. In every province licences or permits issued by the provincial authorities are required for motor vehicles, trailers, operators or drivers, paid chauffeurs, dealers, garages and gasoline and service stations. The more important sources from which provincial revenue from motor vehicles is derived are shown in Table 15.13. Motive fuel tax rates and federal government revenue from excise and sales taxes are given in Chapter 20.

Motive fuels for motor vehicle use are taxable at the point of sale. To estimate the amount of fuel sold for motor vehicles, tax-exempt sales to the federal government and other consumers, exports and sales on which tax refunds are paid are eliminated from gross sales. As shown in Table 15.14, consumption of taxable gasoline, which is used almost entirely for automotive purposes, rose 7.5% in 1972 and net sales of diesel oil 28.5%.

15.4 Water transport

The Canada Shipping Act (RSC 1970, c.S-9) is the most significant statute dealing with shipping. Other important legislative measures include the Pilotage Act, the Arctic Waters Pollution Prevention Act and the Navigable Waters Protection Act. Under the Canada Shipping Act, the Arctic Waters Pollution Prevention Act and their amendments, the Parliament of Canada has complete jurisdiction over the regulation of shipping in Canadian-controlled waters.

15.4.1 Shipping

Except in the case of the coastal trade, all Canadian waterways, including canals, lakes and rivers, are open on equal terms to the shipping of all countries of the world so that Canadian shipping must compete with foreign flag shipping.

The carriage of goods and persons from one Canadian port to another, commonly referred to as the coastal trade, is restricted to ships registered in Canada within the region from Havre-Saint-Pierre on the St. Lawrence River upstream to the head of the Great Lakes. Elsewhere in Canada, the coastal trade is restricted to ships registered in a Commonwealth country.

Canadian registry. Under Part I of the Canada Shipping Act ships exceeding 15 net registered tons and pleasure yachts over 20 net registered tons must be registered; vessels of lower tonnages, if not registered, must be licensed if powered by a motor of 10 hp or more. Section 6 of the Act restricts ownership: an owner must be a British subject, or a body corporate incorporated under the law of a Commonwealth country with its principal place of business in that country. A ship registrable in Canada may be recorded, pending registration, by a Registrar of Shipping while still under construction.

Vessels on the Canadian shipping registry. As at December 31, 1973, there were 29,539 ships constituting 3.9 million gross tons registered in Canada. This represents an increase over the previous calendar year of 955 ships and 75,094 gross tons.

Shipping traffic. Table 15.15 shows the number and tonnage of all vessels (except those of less than 15 registered net tons, naval vessels and fishing vessels) entering Canadian customs and non-customs ports.

Freight movements through large ports take different forms, including cargoes for or from foreign countries and cargoes loaded and unloaded in coastwise shipping, i.e. domestic freight moving between Canadian points. Table 15.16 presents data by province on cargoes loaded and unloaded from vessels in international or coastwise shipping. In 1972 a total of 299.4 million tons were loaded and unloaded at the principal Canadian ports, compared with 288.1 million tons in 1971. In-transit movement in vessels that pass through harbours without loading or unloading and movements from one point to another within harbours are also numerous in many ports.

Shipping statistics, which cover traffic in and out of both customs and non-customs ports, do not include freight in transit or freight moved from one point to another within the harbour. Table 15.17 shows the principal commodities loaded and unloaded in international and coastwise shipping at the 19 ports handling the largest cargo volumes in 1972. These ports handled 80.5% of all Canada's international shipping and 64.3% of the coastwise trade. The specific commodities shown are those transported in volume and often in bulk form.

15.4.2 Ports and harbours

The ports and harbours of Canada comprise 25 large deep-water ports and about 650 smaller ports and multi-purpose government wharves on the east and west coasts, along the St. Lawrence Seaway and Great Lakes, in the Arctic, and on interior lakes and rivers.

The administration of Canadian ports is generally under the Ministry of Transport's Canadian Marine Transportation Administration. Canada's harbours are subdivided into National Harbours Board ports, harbour commission ports, public harbours and government wharves. About 2,000 fishing harbours and facilities for recreational boating are administered by the Department of the Environment.

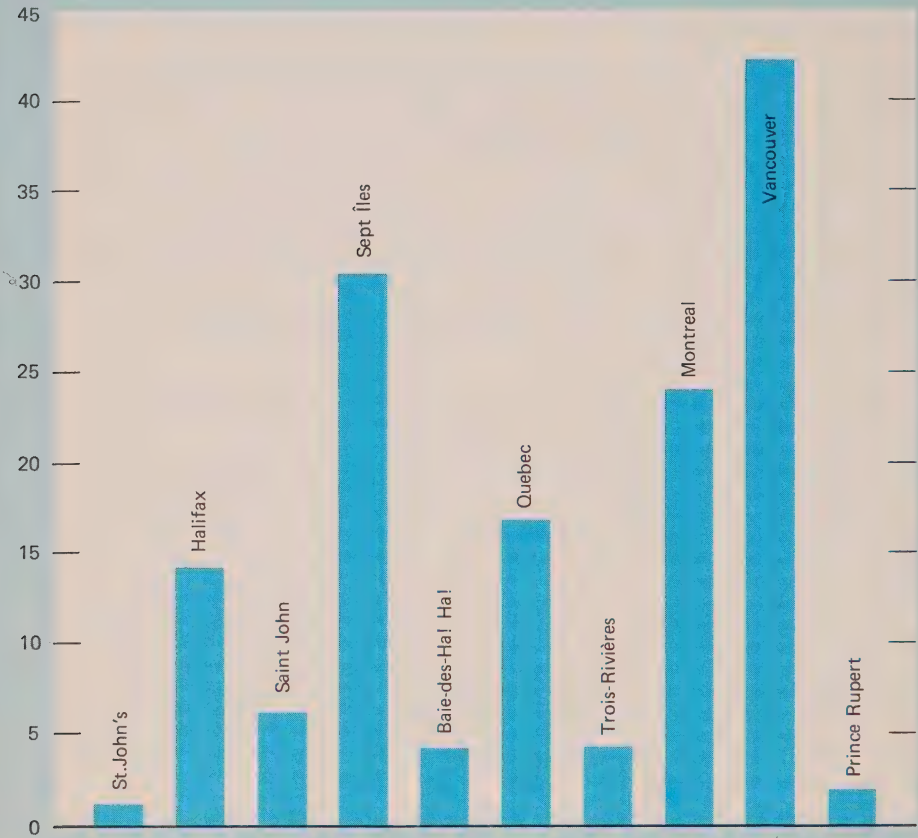
The National Harbours Board, a Crown corporation, is responsible for administering the Jacques Cartier and Champlain bridges at Montreal, grain elevators at Prescott and Port Colborne, Ont. and port facilities such as wharves and piers, transit sheds, grain elevators, etc. at the harbours of St. John's, Nfld.; Halifax, NS; Saint John and Belledune, NB; Sept Îles, Chicoutimi, Baie-des-Ha! Ha!, Quebec, Trois-Rivières and Montreal, Que.; Churchill, Man.; and Vancouver and Prince Rupert, BC. The number of vessels and the amount of tonnage handled at these ports in 1972 and 1973 are reported in Table 15.18.

The capital values of fixed assets administered by the Board amounted to almost \$421.0 million at December 31, 1972 and \$439.0 million at December 31, 1973; these figures include expenditures on all buildings, machinery and durable plant improvements less deductions for depreciation, and represent a fair approximation of the properties' present value. During 1973 the federal government advanced \$2.1 million to the National Harbours Board for capital expenditures of \$100,000 at Prince Rupert and \$2.0 million at Vancouver.

Harbour commissions. Eleven of Canada's major multi-purpose harbours are administered by harbour commissions under the general supervision of the Ministry of Transport. These ports

Cargo tonnages handled at selected harbours, 1973

Millions of tons



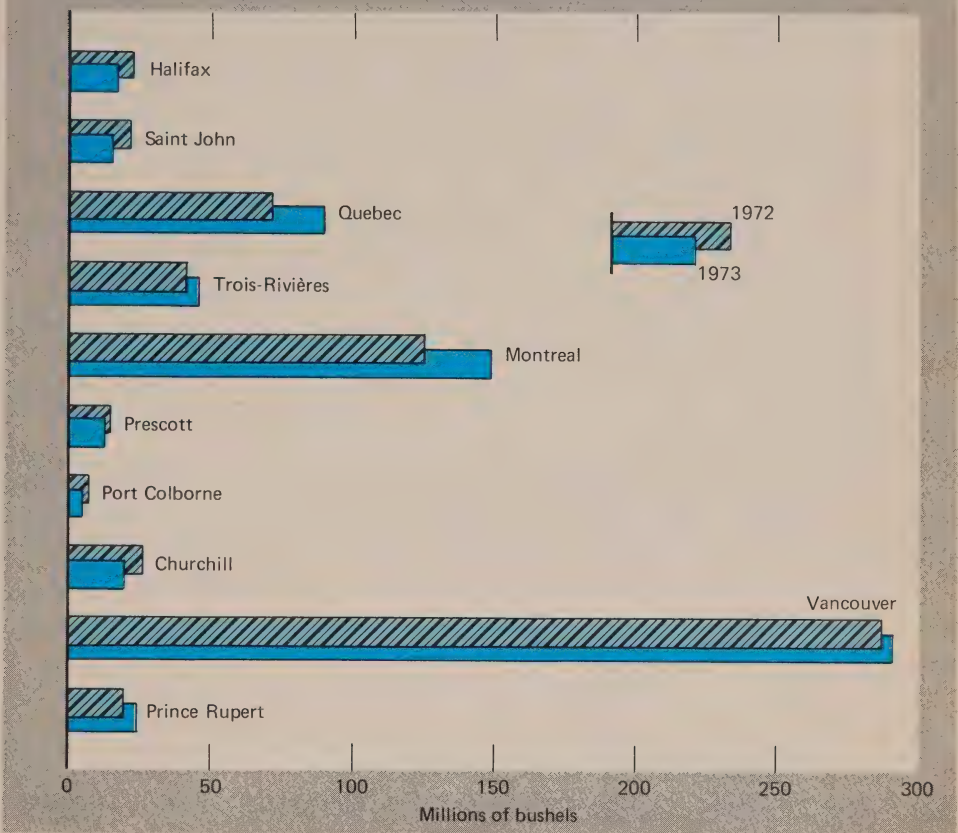
include The Lakehead (Thunder Bay), Windsor, Hamilton, Toronto, Oshawa and Belleville, Ont. on the Great Lakes; Winnipeg—St. Boniface, Man. on the Red River—Lake Winnipeg System; Fraser River (New Westminster), North Fraser, Nanaimo, and Port Alberni, BC. The harbour commissions include municipal as well as federal appointees, and are responsible for regular administration, operation and maintenance as well as for close liaison with the Ministry of Transport and with the regional and local interests they serve.

Public harbours. More than 300 public harbours are directly administered by the Canadian Marine Transportation Administration. Harbour masters and wharfingers at these ports are fees-of-office employees appointed by the Minister of Transport. Some of the larger public harbours are Baie Comeau, Que.; Corner Brook and Come By Chance, Nfld.; Sydney and Port Hawkesbury, NS; Sault Ste Marie and Goderich, Ont.; and Victoria, Kitimat and Tasu, BC.

Government wharves. Most of the government wharves for which the Marine Transportation Administration is directly responsible are located within public harbours and are used for commercial traffic including fishing and auto/truck ferries. Some major interprovincial federal ferry terminals are administered by the Canadian Surface Transportation Administration. Provincial governments administer ferry wharves for services of an intraprovincial nature.

The Ministry of Transport is responsible for planning and providing adequate public port facilities to serve commercial interests and to expand or phase out facilities in response to economic growth or changes in traffic patterns resulting from new industries, trends to new types

Shipments from National Harbours Board grain elevators, 1972 and 1973



of ships and new developments in cargo handling. Specialized deep-water terminals for bulk commodities are also provided when needed under long-term cost recovery agreements with individual industries. These may complement related development programs sponsored by the Department of Regional Economic Expansion.

Rates and charges. The Ministry establishes and collects fees from users of port facilities, and all rates assessed by ports under federal jurisdiction are subject to Ministry approval. Harbour dues, cargo rates, wharfage, berthage and other charges on goods and vessels are subject to some regional and local variation and are designed to recover a reasonable share of the annual federal investment in Canada's harbours through the Department of Public Works as well as the Ministry of Transport and its component agencies.

Private facilities. In addition to public facilities, there are extensive wharf and associated cargo handling facilities owned by private companies, particularly specialized facilities for handling coal, iron ore, petroleum, grain and pulpwood. At Sept Îles, Que. the Iron Ore Company of Canada owns and operates extensive facilities to load pelletized iron ore onto ocean-going and Great Lakes vessels. Port Cartier was constructed by mining interests in the early 1960s and through large diversified investments of private capital has also become one of Canada's leading export grain terminals. At Port Hawkesbury, NS, Gulf Oil Canada Limited operates a terminal to unload tankers of 350,000 tons deadweight or larger; in Quebec City Canadian Pacific operates a container terminal at Wolfe's Cove; and at Kitimat, BC the Aluminum Company of

Canada Limited operates a multi-purpose terminal to service their smelter operations. There are also many industry owned and operated marine facilities on the Great Lakes and other interior waterways required for Canadian and international movements of ores, coal, petroleum products, limestone and other bulk materials.

Administrative developments. The National Ports Council, an advisory body to the Marine Transportation Administration, met in March and October 1973 to discuss the views of federal and provincial governments, the National Harbours Board and the harbour commissions with respect to a form of administration for the major ports of Canada which would provide a large measure of local responsibility. Studies of submissions are continuing and a report is expected.

Shipping. The continuing trend to the use of larger ships has resulted in increased investment in ports to provide for facilities farther from shore, channel dredging, larger turning basins and more complex systems of aids to navigation and traffic control. Also, environmental considerations often require expensive terminal construction.

Deep-water oil terminals capable of handling tankers of 350,000 tons deadweight and larger, drawing 90 ft of water or more, operate at Port Hawkesbury, NS in the Strait of Canso, Mispic Point, NB near Saint John and at Come By Chance, Nfld. New proposals under intensive study include other sites on the Strait of Canso, Lorneville, NB and on the lower St. Lawrence River. New facilities at Sept Îles, Que. permit loading of ore carriers up to 250,000 tons.

Increasing use of containers brings significant changes in cargo routing and handling. Saint John, Halifax, Quebec, Montreal, Toronto, Vancouver and New Westminster have major container terminals. Both CP Rail and Canadian National operate fast container trains between these ports and inland centres in Canada and the United States.

Container ships travel at speeds up to 33 knots and port turnaround time is critical to the economics of operating them. Port facilities have to be more efficient and specialized; they include special ramps for roll-on roll-off vessels; large container cranes which can handle 20 or more 15-ton containers in an hour; special container packing facilities; large open storage areas for containers, automobiles, lumber and bulk products like coal; and rail and truck loading and unloading facilities. Increasing container storage space rather than handling or ship movement has become the critical factor.

15.4.3 The St. Lawrence Seaway

Events leading up to the beginning of the St. Lawrence Seaway project and the progress made during the years of its construction are covered in earlier editions of the *Canada Year Book*. The 1956 edition (pp 821-829) gives detailed information on Great Lakes—St. Lawrence waterway traffic immediately before construction began on the project and the 1960 *Canada Year Book* (pp 851-860) relates the story of the Seaway during the second year of its operation. The first decade of Seaway development and operations is discussed in the 1969 edition (pp 841-845).

The St. Lawrence Seaway Authority, constituted as a corporation by Act of Parliament in 1951, undertook the construction (and subsequent maintenance and operation) of Canadian facilities between Montreal and Lake Erie to allow navigation by vessels of 27-ft draft. At the same time, construction of similar facilities in the International Rapids Section of the St. Lawrence River was undertaken by the Saint Lawrence Seaway Development Corporation of the United States. The Seaway was opened to commercial traffic on April 1, 1959 and officially inaugurated on June 26, 1959. With its opening, certain ancillary canals were transferred to the Seaway Authority's jurisdiction for operation and maintenance purposes. These include Lachine (closed in 1971), a section of the Cornwall Canal (closed in 1968), a portion of the third Welland Canal and the Canadian lock at Sault Ste Marie. Tolls are not assessed against vessel movements on these waterways and traffic data for them are not included in this Section. Major construction undertaken in 1967 on the channel to bypass the city of Welland was completed for the 1973 navigation season.

Seaway traffic. Tables 15.19 and 15.20 give combined traffic statistics for the St. Lawrence and Welland canals in 1972 and 1973. Duplicate transits are eliminated so that the figures show the actual movement of goods through the St. Lawrence Seaway.

In 1973, 4,160 ships carrying about 30.3 million tons of cargo moved upbound through the Seaway and 4,124 vessels carrying 44.9 million tons moved downbound. Ocean-going ships carried 23.9% of the total cargoes and lakers 76.1%. Of the total tonnage carried upbound

in 1973, 23.7 million tons were domestic cargo and 6.6 million tons were foreign traffic; downbound, 33.5 million tons were domestic freight and 11.4 million tons were carried to and from foreign ports.

On the Montreal — Lake Ontario section, upbound traffic amounted to 27.6 million tons in 1973 and downbound traffic to 30.0 million tons, an increase of 7.4% over 1972. Almost 56.8% of the former was accounted for by iron ore shipped from St. Lawrence ports to Hamilton and Lake Erie and the downbound traffic consisted largely of overseas shipments of grain. There were 87 more upbound transits and 76 more downbound transits in 1973 than in 1972, indicating a slight increase in the number of vessels using this portion of the Seaway. Bulk commodities made up 89.9% of the total traffic through the section in 1973, the principal commodities through the St. Lawrence canals being iron ore, wheat, corn, fuel oil, manufactured iron and steel, and barley. Traffic patterns show that 30.4% of the total movement was between Canadian ports, 38.3% between Canadian and United States ports, and 31.1% consisted of foreign trade to and from Canada and the United States. The small remainder was traffic between ports in the United States.

There were 6,815 transits through the Welland Canal in 1973, with a cargo volume of 23.7 million tons upbound and 43.5 million tons downbound; bulk cargo accounted for 92.4% of the traffic. Although many vessels pass through both the St. Lawrence and Welland canals on "through" trips, there is a substantial amount of local traffic between Great Lakes ports which involves only the Welland Canal. These movements are largely of iron ore, grain and coal. The Welland Canal traffic was 9.6 million tons greater than that reported for the Montreal—Lake Ontario section.

Income of the St. Lawrence Seaway Authority for 1973 amounted to \$28.4 million, made up of toll revenue of \$24.6 million assessed for transits through the Seaway locks between Montreal and Lake Erie and sundry revenues (rentals, wharfage, bridge revenue, etc.) of \$3.8 million. Total expenses for 1973 amounted to \$27.6 million of which operation and maintenance expenses amounted to \$19.3 million, regional headquarters, headquarters administration and engineering expenses to \$7.3 million and construction to \$985,158 (Table 15.21).

15.4.4 Federal government marine services

Headquarters organization. The Marine Services of the Ministry of Transport has seven branches — Aids and Waterways, Marine Safety, Canadian Coast Guard, Marine Pilotage, Marine Telecommunications and Electronics, Marine Finance and Marine Personnel — each headed by a director responsible to the Deputy Administrator (Marine Services), Canadian Marine Transportation Administration. An additional unit, the Marine Emergency Office, also reports to the Deputy Administrator.

The Aids and Waterways Branch has two divisions — Marine Aids and Waterways Development.

Marine Aids Division is responsible for planning, policy development and program administration related to a national system of marine aids to navigation and traffic control, and for research and development in these two areas. These responsibilities include the installation, operation and maintenance of electronic navigation systems such as Decca, Loran A and Loran C. They also include the development of port entry systems which involve radar surveillance, traffic control and conventional floating and shore-based aids to navigation. The Division develops standards and guidelines for the operation and maintenance of over 20,000 marine aids to navigation consisting of lightstations, buoys, fog signals and shore-based unattended lights. It carries out research and development related to new atomic and solar power sources as well as on conventional battery and hydro sources. The Marine Aids Division is responsible for administering the Navigable Waters Protection Act.

The Waterways Development Division is responsible for developing national plans, policies and programs to improve commercial navigable waterways and for related research, including hydraulic model studies carried out in co-operation with other government agencies.

The Marine Safety Branch has three divisions — Steamship Inspection, Nautical Services and Air Cushion Vehicles. The Branch is responsible for administering the parts of the Canada Shipping Act related to operating Canadian ships and ships within Canadian waters; it is charged with the registering of shipping, licensing ships, certifying ships' officers and engaging and discharging ships' crews. Other responsibilities include safety inspection of ships, handling

of dangerous cargoes, investigating marine accidents and administering regulations regarding oil pollution in Canadian waterways.

The Marine Safety Branch protects the interests of the owners of wrecked ships and their cargoes and the interests of the Crown in unclaimed wrecks. It has responsibilities for policy formulation in such matters as the coastal trade, the limitation of liability of ship, wharf and canal owners and the rights and liabilities in disputes between ship owners and cargo owners, *stevedores' liens* and salvage claims.

The Canadian Coast Guard is responsible for the over-all direction of the Canadian Coast Guard fleet which consists of more than 80 active ships including heavy, medium and light icebreakers, an icebreaker-cable repair ship and two weather-oceanographic ships which alternate in manning Pacific Weather Station "Papa", 900 miles west of Victoria, BC.

The fleet services thousands of lightstations, shore lights, buoys and other navigation aids along Canada's coasts and inland waterways. During the Ministry of Transport's Arctic re-supply operations each summer, Coast Guard ships work in conjunction with chartered commercial vessels to move approximately 500 tons of cargo to five or six northern ports. In the winter the icebreakers aid commercial shipping in the Gulf of St. Lawrence from Cabot Strait to the Quebec north shore and break ice jams to prevent flooding along the St. Lawrence River, particularly between Trois-Rivières and Montreal.

In addition, Coast Guard ships patrol the St. Lawrence Ship Channel to ensure that it is maintained at its advertised depth; carry out most marine search and rescue operations; and assist other departments doing oceanographic and hydrographic research or investigating Arctic developments. Often a Coast Guard ship is the operational base for the scientific research team.

The Marine Pilotage Branch was established as a separate entity in February 1972 to provide advice on pilotage matters, and is responsible for establishing national technical standards and conducting research required to ensure that these standards are maintained. It is also responsible for prescribing standards for health, uniform financial reporting procedures, procedures for hearings held by Pilotage Authorities, and recommending the establishment of compulsory pilotage areas where an Authority fails to do so and it is considered to be in the public interest.

The Pilotage Act, which came into force February 1, 1972, established the Atlantic Pilotage Authority, Laurentian Pilotage Authority, Great Lakes Pilotage Authority and Pacific Pilotage Authority. Their objectives are to establish, operate, maintain and administer, in the interest of safety, an efficient pilotage service within their respective regions.

The Marine Telecommunications and Electronics Branch is responsible for operating a communications and electronics engineering service in support of Marine Services ships and operations, for developing new or improved specialized equipment and for providing electronic navigational systems.

The major function of the Marine Emergency Office is the development and execution of oil pollution contingency plans for all territorial waters including those which are contiguous with US waters.

Field organization. In the field, a regional management organization within the Marine Services has been developed to provide the Ministry with more efficient means of matching resources to workloads in all areas. Included in the completed system are 11 established District Marine Agencies, and 15 other Marine Services field offices that in the past have reported individually to Marine Services directors or to the Administrator, Canadian Marine Transportation Administration.

The first step was completed in 1967 with the establishment of the Maritimes Region, covering the Maritime Provinces and outlying islands including Sable Island and the Magdalen Islands, and including all Marine Services activities in the three provinces. In 1968 the Western Region, including the Pacific Coast, western and northwestern Canadian waterways and the western Arctic, was established with the same responsibilities as the Maritime Region. Later, Newfoundland (and Labrador) was reorganized using an area concept and reporting through an area manager located at St. John's. The Laurentian Region was established early in 1972 and covers all Marine Services field responsibilities in Quebec other than the Magdalen Islands. The Central Region was established in the summer of 1972 covering Ontario and Manitoba.

Aids to navigation. To ensure safe marine navigation, the Ministry of Transport operates lights, buoys, beacons and two electronic networks working on the hyperbolic principle — Loran and Decca. During the year ended March 31, 1974, 4,124 lights, 378 fog signals, 2,656 lighted buoys and 14,777 unlighted buoys and beacons were maintained in Canadian and contiguous waters.

The Ministry operates a vessel traffic management program in the approaches to both coasts, principal harbours, estuaries and bays leading to ports to provide the maximum element of safety to ships entering and leaving Canadian ports.

All aids incorporating light or sound devices are listed in the Ministry of Transport annual publication, *List of lights, buoys and fog signals*. Information on radio beacons and on Loran and Decca is published in *Radio aids to marine navigation*. Broadcast *Notices to shipping* and weekly editions of *Notices to mariners* provide additional information on marine hazards and related matters.

Steamship inspection. The Board of Steamship Inspection, established under the Canada Shipping Act, formulates and enforces a variety of regulations made under the Act, the most important of which deal with approval of design and construction of ships and equipment, inspection during construction and periodically afterward, the carriage of dangerous goods, accident prevention during cargo operations, pollution prevention and control of the marine environment, and training and certification of marine engineers.

The Board's headquarters is in Ottawa; field offices are maintained in the principal ocean and inland ports. Some 1,802 Canadian owned or registered ships were inspected during the fiscal year ending March 31, 1974.

15.5 Civil aviation

15.5.1 Administration and policy

Administration. Civil aviation in Canada is under the jurisdiction of the federal government and is administered under the authority of the Aeronautics Act and the National Transportation Act as amended. The Aeronautics Act is in three parts. Part I deals with the technical side of civil aviation including matters of aircraft registration, licensing of personnel, establishing and maintaining airports and facilities for air navigation, air traffic control, accident investigation and the safe operation of aircraft. This Part of the Act is administered by the Director General, Civil Aeronautics, under the supervision of the Administrator, Canadian Air Transportation Administration, Ministry of Transport. Part II of the Act deals with the economic aspects of commercial air services and assigns to the Canadian Transport Commission certain regulatory functions respecting commercial air services. Part III deals with matters of internal administration in connection with the Act.

Federal civil aviation policy. The federal government announced some revisions to its air policy in 1973. On November 23, the Minister of Transport tabled in the House of Commons a "Statement on Air Policy" which listed the following objectives: to ensure safe, efficient and convenient air services to meet the needs of travelling Canadians; to contribute to the economic and social well-being of the country; and to ensure that air transportation services are reasonably balanced to create an atmosphere in which the airline industry can continue to develop in an efficient and profitable manner without imposing undue burdens on the taxpayer.

On the domestic side, the role of the regional carriers, and their relationship with the mainline carriers (Air Canada and Canadian Pacific Air Lines), remained basically unchanged from that described in the "Statement of Principles for Regional Air Carriers" tabled by the Minister of Transport in the House of Commons on October 20, 1966. These principles are summarized as follows: (1) Regional carriers will provide regular route operations into the North and will operate local or regional routes to supplement the domestic mainline operations of Air Canada and CP Air. (2) Greater scope will be allowed regional carriers in developing routes and services by the following means: where appropriate, limited competition on mainline route segments of Air Canada or CP Air may be permitted to regional carriers; in a few cases, secondary routes at present operated by the mainline carriers may become eligible for transfer to regional carriers; and a large role will be allotted to regional carriers in connection with the development of domestic and international charter services, package tours and

new types of services. (3) Greater co-operation between the mainline and regional carriers will be developed in a variety of fields, ranging from technical and servicing arrangements to joint-fare arrangements. (4) A limited policy of temporary subsidies for regional routes will be introduced, to be based on a "use it or lose it" formula. (5) Firmer control will be exercised over the financial structure of regional carriers in connection with new licensing arrangements. (6) Regional carriers will be assisted in acquiring aircraft through a scheme for consultation between government and the carriers and among the individual carriers.

In a statement made on August 15, 1969, the Minister of Transport defined more precisely the regions in which each of the five regional carriers would be permitted to supplement, or authorized to replace, mainline operations as circumstances warranted. The CTC's Air Transport Committee issued a number of decisions authorizing new services by regional air carriers in accordance with the regional air policy, which the Committee is continuing to apply.

The relative roles of Air Canada and CP Air in the domestic sphere were defined in the transcontinental policy of 1967. These were based on a formula that would maintain Air Canada's pre-eminence on transcontinental services, on the assumption that the carrier might from time to time be called on to perform special services which would not necessarily be in its commercial best interests.

The development of air policy continues, with a new focus on the particular question of third level carriers, whose scope of operation is increasing rapidly.

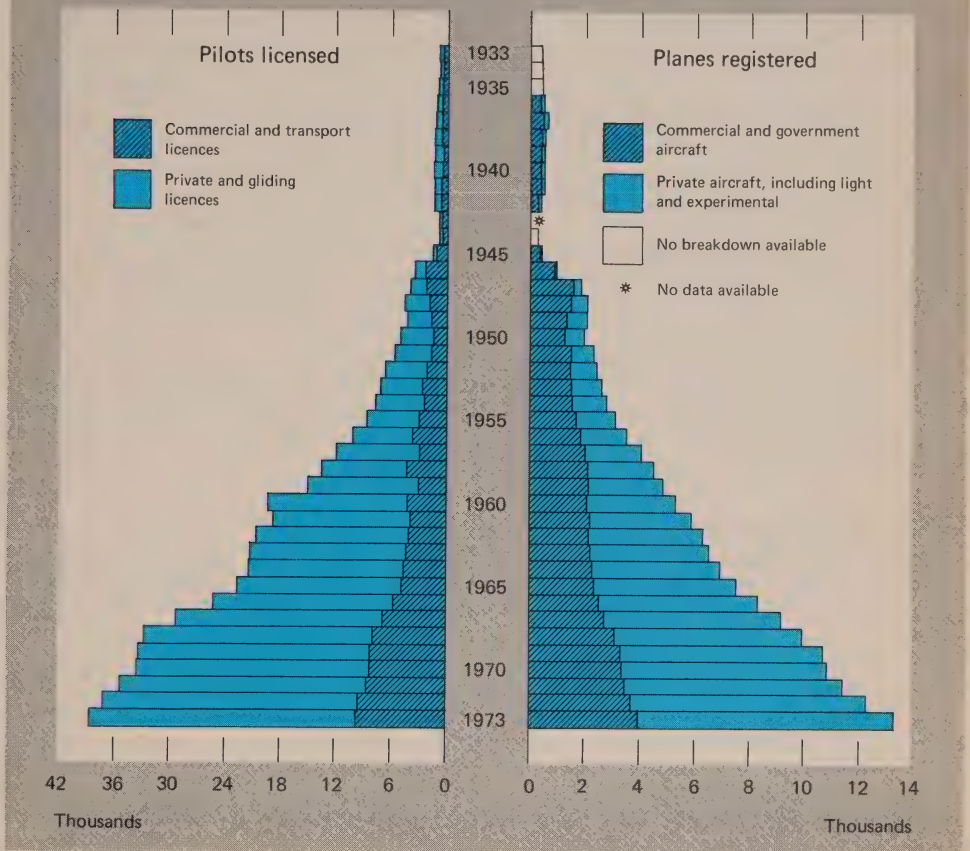
With respect to the international operations of the two major airlines, the policy statement of November 1973 outlined a number of principles which stressed that the economic viability of proposed routes was to remain a major consideration so that international services would generally not be established solely for national prestige. The government reaffirmed that it would refrain from granting or seeking temporary authorizations for international scheduled services, and authorized a series of bilateral negotiations with a number of foreign countries. Co-operation between the two major carriers was also encouraged. The policy assigned specific areas and countries to Air Canada and CP Air which they would serve once bilateral agreements had been satisfactorily concluded. This division was aimed at assisting the airlines in long-range planning for both passenger and cargo services.

Canada's position in the field of aviation as well as its geographical location makes imperative its co-operation with other nations engaged in international civil aviation. Canada therefore took a major part in the original discussions that led to the establishment of the International Civil Aviation Organization which has its headquarters in Montreal. By the end of 1973, Canada had bilateral agreements with 26 other countries. During the year new air agreements were signed with the Federal Republic of Germany and with the People's Republic of China.

Air traffic control. The primary functions of air traffic control in the Ministry of Transport are to prevent collisions between aircraft operating within controlled airspace and between aircraft and obstructions on the manoeuvring area of controlled airports, and to expedite and maintain a safe, orderly flow of air traffic. These functions are carried out by air traffic controllers in airport control towers, terminal control units and area control centres.

Airport control service is provided to aircraft operating on the manoeuvring area or in the close vicinity (five to 10 nautical-mile radius) of civil airports where the volume and complexity of air traffic indicate its need in the interest of flight safety. Service is also provided to other traffic, such as vehicles and maintenance equipment, on the manoeuvring area of an airport. Radio is the prime means of communication, although light signals may be used where radio is not available. Airport control towers are in operation at: Gander International, St. John's, and Wabush (Labrador), Nfld.; Halifax International and Sydney, NS; Fredericton, Moncton and Saint John, NB; Baie Comeau, Montreal International, Quebec, Saint-Honoré, Saint-Hubert, Saint-Jean, Sept Îles, and Victoria Stolport, Que.; Buttonville, Hamilton, London, North Bay, Oshawa, Ottawa International, Ottawa Stolport, Sault Ste Marie, St. Catharines, Sudbury, Thunder Bay, Toronto International, Toronto Island, Waterloo—Wellington, and Windsor, Ont.; Brandon, St. Andrew's, Thompson and Winnipeg International, Man.; Regina and Saskatoon, Sask.; Calgary International, Edmonton International, Edmonton Industrial, Grande Prairie, Lethbridge and Springbank, Alta.; Abbotsford, Fort St. John, Kamloops, Kelowna, Langley, Penticton, Pitt Meadows, Port Hardy, Prince George, Vancouver International and Victoria International, BC; Whitehorse, YT; Yellowknife and Inuvik, NWT. Two transportable towers have been purchased for use where required in the North.

Canadian aviation, 1933-73



Terminal control service is provided to aircraft which are “climbing out”, after departure from, or “letting down” for a landing at an airport. It is a service provided to flights operating in accordance with the instrument flight rules in order to separate them from one another and from en route aircraft operating through the terminal area which normally is an airspace within 30-50 nautical miles of an airport and which, in some cases, may encompass more than one airport. Radar is normally used, in conjunction with direct controller-pilot radio communication. Procedural means are used at some remote locations where radar is not yet available. The service is provided from all area control centres but separate terminal control units are installed at high-traffic-density airports where no area control centre is located. Such separate units have been established at Halifax, Quebec City, North Bay, Ottawa, Thunder Bay, Regina, Saskatoon and Calgary.

Area control service is essentially an aircraft separation and flight-following service provided to aircraft operating en route between airports. All flights that elect to file flight plans are given flight-following service and separation is provided to all aircraft operating according to the rules for instrument flight or controlled visual flight within designated controlled airspace. Designated controlled airspace consists of (1) high level airspace, i.e. the Southern Control Area, at and above 1,800 ft above sea level (asl); the Northern Control Area, at and above flight level 230; and the Arctic Control Area, at and above flight level 290; and (2) low level airspace, i.e. all airways, terminal control areas and control area extensions in airspace below the high level airspace. In addition, separation is provided to aircraft operating above 5,500 ft asl over almost all of the western half of the North Atlantic Ocean. Separation is

provided using both radar and procedural means, with direct and indirect communication between controller and pilot. An extensive land line communication system links an area control centre with all affiliated airport control towers, terminal control units and communication stations and with adjacent area control centres in Canada and adjoining states, as well as with other agencies providing supporting and auxiliary services or having a need to deal directly with the centre, such as air carrier operations agencies and military operations agencies. Area control centres provide several additional services. The Aircraft Movement Information Service assists the Department of National Defence in identifying all aircraft operating in specified areas. The Customs Notification Service facilitates the notification of appropriate customs agencies by pilots planning to cross the Canada—United States border. When necessary, appropriate search and rescue organizations are notified by the Alerting Service. Pilots en route may receive current information such as weather reports and field condition reports from the Flight Information Service. Area control centres are located at Gander, Nfld.; Moncton, NB; Montreal, Que.; Toronto, Ont.; Winnipeg, Man.; Edmonton, Alta.; and Vancouver, BC.

Four new and improved terminal radar units have been purchased for installation at Moncton, Montreal, Edmonton and Vancouver. The unit now at Vancouver will be transferred to Gander to replace the older type now in use there.

The Airspace Reservation Coordination Office provides reserved airspace for specified operations within controlled airspace and information to other pilots concerning these reservations and military activity areas in controlled and uncontrolled airspace. The Office, located in Ottawa, is responsible for providing the service in all Canadian airspace and in the Gander Oceanic Control Area.

15.5.2 Commercial air services

The Canadian flag carriers operating international and domestic air routes are Air Canada and CP Air, which together earn 72% of the total operating revenues of Canadian commercial air carriers. The five regional carriers (Eastern Provincial Airways, Nordair, Quebecair, Pacific Western Airlines and Transair) earn 11% of the total operating revenues. The remaining 17% is earned by some 600 smaller airlines, many of them operating in areas of Canada which are relatively inaccessible by surface transport. On international routes, the Canadian flag carriers provide scheduled services to Europe, the Soviet Union, Asia Minor, the People's Republic of China, Japan and Hong Kong, Mexico and South America, the Caribbean, Australia and the United States (including Hawaii). Thirty foreign airlines have scheduled services between Canada and other countries.

The Canadian Transport Commission (Air Transport Committee) in its Directory of Canadian Commercial Air Services classifies commercial air carriers into two major groups, domestic and international.

Domestic air carriers, which operate wholly within Canada, are divided into seven classes: (1) Scheduled carriers provide public transportation of persons, goods or mail to designated points according to a service schedule, at a toll per unit; (2) Regular Specific Point carriers, to the extent that facilities are available, provide public transportation of persons, etc., to points according to a service pattern, at a toll per unit; (3) Specific Point carriers provide public transportation, serving points consistent with traffic requirements and operating conditions, at a toll per unit; (4) Charter carriers offer public transportation from a base specified in the licence, at a toll per mile or per hour for the charter of the entire aircraft, or at such other tolls as may be permitted by the Air Transport Committee; (5) Contract carriers do not offer public transportation, but carry persons or goods solely under contract; (6) Flying clubs are incorporated as non-profit organizations and provide flying training and recreational flying; (7) Specialty carriers operate for purposes not provided by other classes such as aerial photography and survey, aerial distribution (crop dusting, seeding), aerial inspection, reconnaissance and advertising, aerial control (fire control, fire-fighting, fog dispersal), aerial construction and air ambulance and mercy services.

International air carriers, which operate between points in Canada and points in any other country, constitute two more classes of carrier: (8) International Scheduled carriers provide public transportation serving points according to a service schedule, at a toll per unit; and (9) International carriers are domestic and foreign air carriers which operate any commercial service performed by domestic carriers in (2), (3), (4) and (5).

15.5.2.1 Canada's international flag carriers

Air Canada, a Crown corporation incorporated in 1937 as Trans-Canada Air Lines, maintains passenger, mail and commodity services over a network of 89,000 route-miles, extending to 57 destinations in Canada, the United States, the British Isles, Europe and the Caribbean. After earning a record net profit of \$8.7 million in 1972, the company was adversely affected by world economic pressures, especially in the area of fuel, but continued to experience a stimulating growth rate through 1973, resulting in a net income of \$6.12 million. Air Canada carried 8.3 million revenue passengers in 1972 and over 10.0 million in 1973.

Available seat-miles on scheduled flights increased in 1973 to 14.4 billion compared with 12.2 billion in 1972. Revenue passenger-miles grew by 21.5% to 9.6 billion. Passenger load factor across the system was 67.0%, up from 65.0% in 1972. Total revenue ton-miles increased 22.6% to 1.3 billion. Air freight continued to show satisfactory growth, expanding by 9.9% to 245.2 million ton-miles.

Passenger revenues, which account for 82% of total revenues, amounted to \$568.9 million in 1973, up from \$475.7 million in 1972. Total revenues were \$698.0 million, compared with \$583.3 million in 1972. Operating expenses in 1973 climbed to \$651.7 million, compared with \$538.0 million the previous year.

Two DC-9-15s, two DC-9-32s (one of which is an all-freight aircraft), six Lockheed L-1011s and one Boeing 747 were added to the fleet during 1973. A DC-8 was purchased from Air Jamaica to replace an aircraft lost by fire at Toronto in June. At December 31 the fleet consisted of 107 aircraft: four Boeing 747s, six Lockheed L-1011s, 38 DC-8s, 51 DC-9s and eight Viscounts. Two L-1011s were operated from May through October under a 15-year lease agreement, which makes them available for the busy summer period until 1987.

Canadian Pacific Air Lines Limited (CP Air), a private airline, was established in 1942 by integrating 10 air carrier bushline companies and has since developed into a major international flag carrier. In 1973 CP Air carried 1.7 million revenue passengers and flew 3.1 billion passenger-miles. Operating revenues for the year reached \$185.9 million.

CP Air's network radiates from the company's headquarters in Vancouver to Japan, Hong Kong, the Netherlands, Hawaii, Fiji, Australia, Portugal, Spain, Italy, Greece, Israel, Mexico, Peru, Chile and Argentina. There are regular west coast flights between Vancouver and San Francisco. Service from Vancouver to Shanghai and Peking was scheduled to begin in the first half of 1974. In November 1973, the Minister of Transport announced certain revisions to the government's international aviation policy and, at the same time, designated CP Air to serve Milan, Italy. The policy statement confirmed CP Air's rights on the routes it now serves and gave it, in addition, the possibilities of serving North Africa, Iran, Brazil, and new destinations in the Pacific and the Far East where the airline's operations are important to Canada's relations with the developing nations. A new bilateral agreement signed in 1973 gave CP Air the right to serve new destinations in the United States. Within Canada CP Air's transcontinental services link Vancouver, Edmonton, Calgary, Winnipeg, Toronto, Ottawa and Montreal; the company also operates interior services in British Columbia and the Yukon Territory.

CP Air operates 24 aircraft: two Boeing 747s, 11 Douglas DC-8s, seven Boeing 737s and four Boeing 727s.

15.5.2.2 Regional airlines

Eastern Provincial Airways (1963) Limited is the regional carrier for the Atlantic Provinces. In 1973 it carried 538,990 revenue passengers about 216 million passenger-miles, and 5,163 tons of freight 2.5 million ton-miles. Operating revenues were \$21.2 million, 15% higher than 1972 revenues of \$18.5 million. Scheduled services were operated to Charlottetown, PEI; Moncton—Chatham—Charlo—Fredericton and Saint John, NB; Sydney and Halifax, NS; Deer Lake—Stephenville—Gander—St. John's and St. Anthony, Nfld.; Goose Bay—Wabush (Labrador City) and Churchill Falls in Labrador; and Montreal and the Magdalen Islands in Quebec.

The company's fleet at the end of 1973 consisted of five Boeing 737s, three Handley-Page Dart Heralds and one DC-3.

Nordair Ltée-Ltd., with its head office at Dorval, Que., was established in 1957 by the merger of Mont Laurier Aviation and Boreal Airways. Since its formation Nordair has expanded steadily and operates scheduled services in Quebec, Ontario and the Northwest Territories, as

well as extensive domestic and international charter flights throughout Canada and from eastern Canada to the southern United States and the Caribbean.

Scheduled services operate between Montreal, Ottawa, Hamilton, Windsor and Pittsburgh. In 1973, 143,400 passengers were carried on these routes. Scheduled services are also operated between Montreal, Val-d'Or, Fort George, Matagami, La Grande, Chibougamau, Great Whale River and Fort Chimo, Que. and Frobisher Bay and Resolute Bay, NWT; 58,000 passengers and 7,000 tons of cargo were moved between these points in 1973. Nordair also maintains an extensive regular air service from Frobisher Bay, NWT, supplying numerous Arctic settlements in the Baffin Island area, such as Clyde River—Cape Christian, Broughton Island, Pangnirtung, Cape Dorset, Hall Beach and Igloolik. Applications are before the Air Transport Committee to extend Nordair's services to Yellowknife, Pond Inlet and Arctic Bay in the NWT and to Sudbury and Thunder Bay in northern Ontario and before the Danish civil aviation authorities for permission to inaugurate regular air service between Frobisher Bay and Sondrestrom-Fjord in Greenland. This latter application already has the approval of the Canadian government.

Nordair's charter flights accommodate inclusive tour travels and group travel. Its northern charter operation is based at Frobisher Bay where a variety of aircraft, including wheel-, ski- and float-equipped aircraft, are available. Under contract Nordair also provides lateral air services between the DEW-line sites along the Arctic coast and two specially equipped Electra aircraft operate extensive ice reconnaissance services for the federal Department of the Environment.

Nordair's fleet is composed of five Boeing 737-200Cs, three Lockheed L-188 turbo-props, three F-227s, one Twin Otter, one Short Skyvan and six piston-engine powered aircraft.

Pacific Western Airlines Limited, with head office at Vancouver International Airport, operates over 14,000 route-miles. Regularly scheduled mainline services are operated northbound from Edmonton to Prince George and Dawson Creek, BC; Peace River, High Level, Fort McMurray, Rainbow Lake and Fort Chipewyan, Alta.; Uranium City, Sask.; Fort Resolution, Hay River, Fort Smith, Fort Simpson, Rigley, Norman Wells, Inuvik, Yellowknife, Cambridge Bay and Resolute, NWT. The only no-reservations-required Airbus service in Canada operates daily between Calgary and Edmonton, Alta. On the Pacific coast mainline services are operated from Vancouver to Comox, Powell River, Campbell River and Port Hardy, and Sandspit. In the interior of British Columbia, Pacific Western operates scheduled services from Vancouver to Kelowna, Penticton, Cranbrook, Kamloops and through to Calgary; Vancouver to Castlegar and Calgary; and Vancouver to Williams Lake, Quesnel and Smithers. The company also operates international charter passenger services from Vancouver, Edmonton and Calgary and extensive freight services, both over the entire scheduled domestic route system and chartered. Four Lockheed Hercules and a Boeing 320C provide international charter freight services.

In 1973, 1.7 million revenue passengers were carried; revenue passenger-miles totalled 620.9 million miles, cargo ton-miles were 56.3 million and aircraft miles flown numbered 14.8 million. Comparable figures for 1972 were 1.3 million, 492.0 million, 41.8 million and 13.1 million, respectively.

Pacific Western Airlines operates 22 aircraft: two Boeing 727s, two Boeing 707s (passenger and cargo), seven Boeing 737s, five Convair 640 jet props, four Lockheed Hercules (freight) and two Lockheed Electras (passenger and freight).

Quebecair, with its head office at Montreal International Airport, Dorval, offers scheduled services in Quebec and Labrador. The company was founded in 1946 under the name *Le Syndicat d'Aviation de Rimouski*. The name was changed to Rimouski Airlines in 1947 and to Quebecair in 1953 when it was amalgamated with Gulf Aviation. During 1965 Quebecair acquired Northern Wings Limited and Northern Wings Helicopters Limited and in 1967, A. Fecteau Transport Aérien Ltée.

Quebecair is responsible for operating scheduled services and the subsidiaries handle flights by light aircraft, charter and contract services. Scheduled services are operated over 6,000 miles serving some 43 localities in nine economic regions of Quebec and Labrador. Points linked are Montreal, Quebec City, Murray Bay (Charlevoix), Baie Comeau (Hauterive), Churchill Falls (Twin Falls), Gagnon, Wabush (Labrador City), Mingan, Mont-Joli—Rimouski, Rivière-au-Tonnerre, Saguenay (Bagotville), Schefferville, Sept Îles, Sen-

neterre, Mistassini, Témiscaming, Lac Doda, Lac Caché, Lac Mistassini, Rupert River, Fort George, Obedjiwan, Oskelaneo, Manouane, Val-d'Or, Amos, Lebel-sur-Quévillon, Rupert House, Chibougamau, Matagami, Blanc Sablon, Saint-Paul, Old Fort Bay, Saint-Augustin, La Tabatière, Tête à la Baleine, Harrington Harbour, Gethsemani, Kégaska, Natashquan, Aguanish, Baie Johan Beetz and Havre-Saint-Pierre. Quebecair also operates group charters within Canada and to the United States, the Caribbean, Bermuda, Mexico and South America, using jet aircraft.

Revenue passengers transported by Quebecair in 1973 numbered 522,744 for 191.4 million passenger-miles, and 4,011 tons of goods were hauled for a total revenue of \$14.4 million.

Quebecair's large and varied fleet of aircraft enables it to meet the varied requirements of the many diversified groups in today's charter market. The combined fleet of Quebecair and its subsidiaries totalled 61 units: three BAC 111 jets, eight Douglas DC-3s, 10 DHC-3 Otters, three Cessna 180s, one Beechcraft Queen Air 80, four F-27 turbo-props, one Curtiss C-46, 14 DHC-6 Beavers, two Cessna 185s, one Beechcraft 18 and 14 helicopters.

Transair Limited. This company was formed in November 1969 through the merger of Transair Limited and Midwest Airlines Ltd., both of Winnipeg. With headquarters at the Winnipeg International Airport, the company operates scheduled services in Manitoba, Saskatchewan, Ontario and the Northwest Territories and charter flights throughout Canada and from Canada to the United States, Mexico and the Caribbean. The company's scheduled services are operated in Manitoba — from Winnipeg to The Pas—Flin Flon—Lynn Lake—Thompson and return; from Winnipeg to Thompson—Churchill and return; from Winnipeg to Norway House and return; Eastern — from Winnipeg to Thunder Bay—Toronto and return; from Winnipeg to Kenora—Dryden—Thunder Bay—Sault Ste Marie—Toronto and return; from Winnipeg to Red Lake and return; and Arctic — from Churchill to Eskimo Point—Rankin Inlet—Baker Lake and return; from Churchill to Coral Harbour—Repulse Bay—Hall Beach and return; and from Winnipeg to Churchill—Yellowknife and return. Several other points in the Northwest Territories are also served by flights from Churchill.

Transair's fleet comprises 22 aircraft, including nine helicopters, three Boeing 737 twin jets, two Fokker F-28 jets, three Argosy 222 freighters capable of carrying 28,500 lb., two YS-11s, two Twin Otters and a Boeing 707 (on lease). Since 1961, under contract with the United States Air Force, Transair has operated the vertical re-supply flights to the four main sites in the Canadian sector of the DEW-line in the high Arctic from Winnipeg and Churchill.

In 1973 Transair flew 6.4 million miles and carried 405,000 passengers 225.0 million passenger-miles, compared with 327,707 passengers for 159.0 million passenger-miles in 1972. Operating revenues equalled \$22.1 million in 1973 and \$16.8 million in 1972.

15.5.2.3 Commonwealth and foreign scheduled commercial air services

At the end of 1973 there were 33 foreign air carriers holding valid Canadian operating certificates and licences issued for international scheduled commercial air services into Canada: Aeroflot (USSR), Aeronaves de Mexico, S.A., Air France, Air Jamaica (1968) Ltd., Alitalia-Linee Aeree Italiane, Allegheny Airlines Inc., American Airlines Inc., British Overseas Airways Corporation, British West Indian Airways, Czechoslovak Airlines, Delta Airlines Inc., Eastern Air Lines, El Al Israel Airlines Ltd., Hughes Air West, a division of Hughes Air Corporation, Iberia Air Lines of Spain, Irish International Airlines, Japan Air Lines Company Ltd., KLM Royal Dutch Airlines, Lufthansa German Airlines, North Central Airlines Inc., Northwest Airlines Inc., Olympic Airways S.A., Pan American World Airlines Inc., Qantas Airways Limited, Sabena Belgian World Airlines, Scandinavian Airlines System, Seaboard World Airlines Inc., Swissair, Transportes Aereos Portugueses S.A.R.L., Trans-World Airlines Inc., United Air Lines Inc., Western Air Lines Inc. and Wien Air Alaska, Inc.

15.5.3 Civil aviation statistics

Ground facilities. Canadian aerodromes are listed in Table 15.22, classified by region as licensed or unlicensed land facilities or seaplane bases, or military aerodromes. Licensed aerodromes are those that are inspected by Ministry of Transport inspectors at regular intervals and meet specific standards. In addition to aerodromes, a network of radio aids to navigation is maintained to facilitate en route navigation and safe landings under instrument conditions.

Airport activity. In 1973, 6.8 million aircraft landings and take-offs were recorded at 181 reporting airports, 1.5 million at airports without towers and 5.3 million at 60 airports with air traffic control towers. Of the latter, the 56 airports with Ministry of Transport towers handled 5.3 million aircraft movements (Table 15.23), the four Department of National Defence airports, 87,687 movements.

In 1973 Toronto International airport continued to lead in itinerant activity with 208,775 movements, Montreal International retained second place with 180,029, Vancouver International was third with 167,837 while Edmonton Industrial and Winnipeg International occupied fourth and fifth positions with 111,614 and 104,472 movements each, respectively.

At airports with air traffic control towers, aircraft with a maximum take-off weight of less than 4,000 lb. accounted for virtually half of all itinerant movements in 1973 and those weighing over 39,000 lb. for 28.0%. Movements by heavier aircraft of more than 314,000 lb. including the Boeing 747, the DC-80 (30-60 series), the Ilyushin 62, the Super VC-10, the DC-10 and the Lockheed Tristar increased to 94,386 movements or 19.6% more than in 1972.

There were 243,688 international movements in 1973 — 27,954 more than in 1972. Toronto and Montreal International airports were responsible for 55.3% of this total. Toronto handled 79,655 of which 67,939 were “transborder” (to and from the United States) and 11,716 were “other international” (to and from points outside Canada and the United States); Montreal International reported 55,007 international movements of which 38,746 were transborder and 16,261, other international.

According to the 1973 survey, 121 airports without towers handled 1.5 million movements, an increase of 3.9% over the total reported by the 118 airports in the 1972 survey. Itinerant movements totalled 535,874 in the period, up 2.9% over the 520,860 recorded in 1972. Local movements, primarily training flights, numbered 981,963 or 4.5% more than the 939,806 movements for the previous year.

Commercial air services. Table 15.24 provides statistics on commercial air services conducted in Canada by Canadian, United States and other airlines with gross annual flying revenues exceeding \$100,000 in 1968 and \$150,000 in 1969-72. Canadian airline figures refer to domestic and international operations; foreign airline figures, to the miles and hours flown over Canadian territory only, excluding passengers and goods in transit through Canada. Table 15.25 gives comparative figures for domestic and international traffic in 1972.

Personnel licences. At December 31, 1973 the total number of personnel licences in force in Canada was 46,206 compared with 44,831 on the same date in 1972. The 1973 licences were constituted as follows with comparable 1972 figures in parentheses: glider pilots 1,438 (1,095), private pilots 29,075 (28,622), commercial pilots 5,691 (5,636), senior commercial pilots 785 (826), airline transport pilots 3,450 (3,172), flight navigators 198 (198), air traffic controllers 1,674 (1,577), flight engineers 127 (121), aircraft maintenance engineers 3,762 (3,579) and gyrocopter pilots 6 (5).

15.6 Urban transportation

Almost 60% of all transportation activity in Canada takes place in urban areas, where approximately 75% of the population lives. Of 8 million cars registered in 1973, 5 million are found in cities and account for 80% of all urban travel. Municipal transit companies operate buses, trains, subways and streetcars, but in spite of a substantial capital investment in facilities and vehicles, have had limited success in competing with the flexibility, comfort and privacy afforded by the automobile. However, a growing adverse public reaction to further road building and increasing concern over the air pollution and congestion generated by private cars has led to a new emphasis on public transit.

Although provincial and municipal governments have greater responsibility for urban transportation, the federal government is reviewing its transportation policies with particular regard to their effect on urban areas. Airports, ports and rail services are the most important federal concerns but there have been direct initiatives in the urban transit field. The government has granted Ontario \$10 million for the purchase of rolling stock for a commuter rail service between Toronto's Union Station and Richmond Hill. The planned Urban Transportation Development Corporation is intended to develop and market new transit vehicles and systems for Canada and for export. The Corporation will also test new ideas in traffic management and operational methods.

The demand for adequate transport facilities in urban areas has placed a heavy financial burden on municipalities. Provincial cost-sharing programs which have contributed to the capital and operating costs of transportation systems in urban areas have until recently been strongly oriented to freeways and roads. Several provinces are now shifting the emphasis from highway construction toward transit planning and construction.

In Manitoba dial-a-bus and rapid transit systems were under study during 1973 but no provincial programs were in effect. In Winnipeg, the City of Winnipeg Transit System added two new express routes to the two already operating and provided an exclusive bus lane through the city core.

In Saskatchewan the provincial government was involved in the introduction of Telebus in Regina in 1971. Telebus offers door-to-door service within individual zones of the city and door-to-connection with scheduled line service for trips between zones. Most of the vehicles are small, carrying 16-24 passengers, but during peak hours standard 42-passenger buses are added to increase capacity. About one third of Regina is now covered and the service should be extended throughout the city by 1975. Initial feasibility studies were sponsored and financed by the federal, provincial and municipal governments, but the city is responsible for operating and funding the actual system.

In 1972 Ontario introduced a specific program to counter transportation problems in its cities. The program included subsidies to municipalities covering 75% of the cost of transit equipment purchase, 50% subsidies to offset transit operating deficits, 50% subsidies for expansion of computer-controlled traffic systems, and financial assistance to promote flexible working hours.

By the end of 1973, 26 municipalities had ordered new transit equipment and facilities eligible for the 75% provincial subsidies, 50 transportation studies had been approved for the 75% reimbursement, and Ottawa, Toronto and Hamilton had taken advantage of the 50% subsidy for upgrading and expanding computer-controlled traffic systems.

Efforts to co-ordinate transportation planning and operations among municipalities in Ontario began to show firm results with a series of recommendations for the formation of Ontario's first regional transit authority. The Toronto Area Transit Operating Authority (TATO), established in 1974, will serve as a model for similar transit bodies throughout the province.

One of Ontario's most successful urban transit programs is the east-west Lakeshore GO Train service between Oakville and Pickering, a distance of 42 miles. The service takes commuters into the core of Toronto from suburban areas. Serving 13 stations in the corridor, the system's focal point is Toronto's Union Station from which passengers have immediate access to the metropolitan transportation grid. The Lakeshore service effectively removes an estimated 14,000 cars from Metropolitan Toronto roads each day. It is operated by Canadian National Railways under contract to the Ontario government along CN rights-of-way.

A second GO Train system extending 30 miles northwest from Union Station serves seven more communities in an area where residents frequently travel between their homes and downtown Toronto.

Dial-a-bus, another GO Transit project, operated in Metropolitan Toronto on an experimental basis. Dial-a-bus systems were installed in three separate parts of Metro to determine whether or not this concept will work in complex urban areas.

Canada's first dial-a-bus service was inaugurated in July 1970 as an experiment in the Bay Ridges area east of Toronto. The province turned the operation over to Pickering township in early 1973 as a proven success.

If improved rapid transit is to play an effective role in moving people within urban centres, traditional rush-hour patterns must be altered to avoid overtaxing the new systems. Toward this end, the Ontario government is paying 75% of the cost of studies and programs designed to stretch rush-hours over longer periods of time. The provincial government has provided flexible working hours for 10,000 of its own employees in the downtown area of Toronto. Some 50% of these have chosen to travel to and from work outside rush-hours. In a survey taken at the end of 1973, 90% of employees polled were in favour of the program. In Metropolitan Toronto, 15 companies with 14,000 employees have moved to flexible working hours while another 24 companies representing 36,000 people are conducting experiments. A budget of \$155,000 has been set to cover the cost of the program over a one-year period.

Car pools represent another solution to the urban traffic jam. A booklet about car pools and how to start them has been produced by the Ontario Ministry of Transportation and Communications. If required, a free computer-matching program is available to help people start car pools. The government is also providing free plans for a Transportation Information Centre to assist in matching potential car poolers.

The provincial government established the Ontario Transportation Development Corporation as a government-industry organization which will provide motivation and leadership in research and development of improved urban transportation systems for markets in Canada, the US and elsewhere. It will also promote development of all types of new technology relating to public transit and authorize funds for research.

One of OTDC's most important projects is the development of an intermediate capacity transit demonstration system, now under construction in Toronto, by Krauss-Maffei of Munich, Federal Republic of Germany. The Krauss-Maffei system, called GO-Urban, uses vehicles with aluminum bodies, magnetically guided and levitated over galvanized steel armature rails mounted on an elevated concrete guideway. Vehicles are propelled by a linear induction motor; operation is controlled by a computer guidance system.

GO-Urban is seen as a possible solution to some of the urban transit problems of Toronto, Hamilton and Ottawa with guideways constructed on existing rights-of-way such as hydro and rail corridors.

Sources

- 15.1 Canadian Transport Commission.
- 15.2 Transportation and Communications Division, Industry Statistics Branch, Statistics Canada.
- 15.2.1 Canadian Transport Commission.
- 15.2.2 Transportation and Communications Division, Industry Statistics Branch, Statistics Canada.
- 15.3.1 Public Affairs, Ministry of Transport.
- 15.3.2 Supplied by respective provincial and territorial governments.
- 15.3.3 Transportation and Communications Division, Industry Statistics Branch, Statistics Canada.
- 15.4 - 15.4.1 Public Affairs, Ministry of Transport; Transportation and Communications Division, Industry Statistics Branch, Statistics Canada.
- 15.4.2 Public Affairs, Ministry of Transport; National Harbours Board.
- 15.4.3 The St. Lawrence Seaway Authority.
- 15.4.4 - 15.5.1 Public Affairs, Ministry of Transport.
- 15.5.2 Canadian Transport Commission and the respective airlines.
- 15.5.3 Transportation and Communications Division, Industry Statistics Branch, Statistics Canada.
- 15.6 Public Affairs, Ministry of Transport.

Tables

..	not available	e	estimate
...	not appropriate or not applicable	p	preliminary
—	nil or zero	r	revised
--	too small to be expressed		certain tables may not add due to rounding

15.1 Subsidies paid for maintenance of coastal and inland shipping services, year ended Mar. 31, 1973 (dollars)

Service	Amount paid
WEST COAST	
Gold River—Zeballos, BC	12,502
Vancouver—northern BC ports	753,000
Vancouver—west coast of Vancouver Island	80,002
Vancouver Island—Ahousat freight service	36,950
Vancouver Island—Kyuquot freight service	37,251
EAST COAST	
St. Barbe, Nfld.—Blanc-Sablon, Que.	194,459
Burnside—St. Brendan's, Nfld.	23,130
Carmansville—Fogo Island, Nfld.	45,000
Cobb's Arm—Change Islands, Nfld.	17,000
Dalhousie, NB—Miguasha, Que.	16,500
Grand Manan and the mainland, NB	259,000
Greenspond—Badger's Quay, Nfld.	32,000
Halifax, NS—Cupids, Nfld.	22,645
Halifax, NS—St. John's, Nfld.	404,419
Montreal—Quebec—Rimouski—north shore ports, Que.	732,000
Owen Sound—Manitoulin Island, Ont.	58,246
Grindstone (Îles-de-la-Madeleine), Que.—Souris, PEI	544,898
Pelée Island and the mainland, Ont.	88,695
Pictou, NS—Charlottetown, PEI—Grindstone, Que.	60,000
Portugal Cove—Bell Island, Nfld.	354,000
Prince Edward Island—Newfoundland	111,289
Wood Island, PEI—Caribou, NS	1,338,105
Twillingate—New World Island, Nfld.	70,797
Montreal, Que.—Corner Brook—St. John's, Nfld.	1,503,563
Total	6,795,453

Amounts shown are net subsidies, after recapture, if any.

15.2 Railway track mileage operated, 1900-72

First main track mileage ¹	Area and type of track	1968	1969	1970	1971	1972
1900	17,657	First main				
1905	20,487	Newfoundland	936	943	944	944
1910	24,731	Prince Edward Island	254	254	254	254
1915	34,882	Nova Scotia	1,301	1,301	1,301	1,291
1920	38,805	New Brunswick	1,665	1,665	1,665	1,665
1925	40,350	Quebec	5,328	5,329	5,329	5,329
1930	42,047	Ontario	10,045	10,045	10,038	9,935
1935	42,916	Manitoba	4,746	4,746	4,746	4,743
1940	42,365	Saskatchewan	8,565	8,565	8,565	8,565
1945	42,352	Alberta	5,650	5,950	6,245	6,228
1950 ²	42,979	British Columbia	4,281	4,289	4,370	4,653
1955	43,444	Yukon Territory	58	58	58	58
1960	44,029	Northwest Territories	—	129	129	129
1965	43,157	United States	339	339	339	339
1970	43,983					
1971	44,153	Total, first main	43,168	43,613	43,983	44,153
1972	44,025	All other	15,490	15,501	15,646	15,557
		Total ³	58,658	59,114	59,629	59,710
						60,037

¹Defined as a single track extending the entire distance between terminals, upon which the length of the road is based.

²Newfoundland included from 1950.

³Excludes approximately 145 miles of joint track.

15.3 Railway rolling-stock in operation as at Dec. 31, 1960, 1971 and 1972

Type	1960	1971	1972	Type	1960	1971	1972
Locomotives	3,752	3,463	3,612	Freight cars	191,553	187,306	186,541
Steam	403	—	—	Automobile	7,249	2,280	2,607
Diesel-electric	3,308	3,449	3,598	Ballast	3,128	2,408	2,383
Electric	41	14	14	Box	111,217	99,904	97,162
Passenger cars	5,119	2,516	2,383	Flat	12,645	19,728	20,414
Turbo train	..	..	..	Gondola	20,310	20,354	20,450
Power unit cars	..	10	10	Hopper	15,578	25,175	25,539
Coach	..	20	20	Ore	5,930	6,819	7,241
Parlour	..	5	5	Refrigerator	10,076	5,403	5,292
Self-propelled cars	111	112	118	Stock	4,917	2,687	2,583
Coach	1,430	707	696	Tank	472	468	474
Combination	172	66	49	Other	31	2,080	2,396
Dining	149	111	99	Privately owned cars	5,031	15,560	18,074
Parlour	137	122	135	Tank	4,999	14,207	14,296
Sleeping	861	464	436	Other	32	1,353	3,778
Baggage, postal and express	2,218	870	808				
Other	41	29	7				

15.4 Commodities¹ hauled as revenue freight by railways, 1971 and 1972 (thousand tons)

Commodity	1971	1972	Commodity	1971	1972
LIVE ANIMALS	162	173	Gypsum	3,912	5,041
Cattle	140	155	Limestone	3,598	4,040
Other live animals	22	18	Other crude non-metallic minerals	16,509	16,543
FOOD, FEED, BEVERAGES AND TOBACCO	37,978	40,550	Waste materials	669	1,094
Meat, fresh or frozen	320	360	FABRICATED MATERIALS, INEDIBLE	63,864	66,993
Other animal products	348	265	Lumber	7,882	9,253
Barley	6,237	7,150	Other wood fabricated materials	2,079	2,083
Wheat	18,617	20,229	Woodpulp and other pulp	5,181	5,302
Other grains	2,459	2,638	Newsprint	5,469	5,667
Milled cereals and cereal products	2,059	2,077	Other paper and paperboard	2,575	2,986
Fruits and fruit preparations	644	651	Chemicals	5,317	5,317
Vegetables and vegetable preparations	1,488	1,574	Potash	5,982	6,353
Sugar	640	524	Other fertilizers	2,326	2,808
Other food and food preparations	1,536	1,462	Petroleum and coal products	12,900	13,036
Animal feed	2,517	2,541	Metals and primary metal products	8,463	8,158
Beverages	1,072	1,031	Cement	1,636	1,584
Tobacco and tobacco products	41	47	Other fabricated materials	4,054	4,447
CRUDE MATERIALS, INEDIBLE	118,096	111,575	END PRODUCTS, INEDIBLE	8,628	9,254
Crude animal and vegetable materials	2,925	2,981	Road motor vehicles and parts	4,897	5,309
Pulpwood	10,659	10,944	Other end products	3,730	3,945
Other crude wood materials	2,414	2,721	SPECIAL TYPES OF TRAFFIC	6,347	7,932
Textile fibres	134	135	Piggyback (trailer and container)*	4,094	5,358
Iron ore	47,840	37,850	Freight forwarder	1,405	1,596
Nickel-copper ore	3,295	2,856	Other special traffic	848	979
Bauxite ore and alumina	3,235	2,774	NON-CARLOAD SHIPMENTS*	1,335	1,433
Other metallic ores	7,762	8,232	Total	236,410	237,910
Scrap metal, slags and drosses	2,340	2,165			
Coal	12,600	14,011			
Crude oil and bituminous substances	205	190			

¹In this table duplications are eliminated, i.e. freight that is interlined between two or more Canadian railways is counted only once. The statistics do not cover United States operations of Canadian railways except for the Canadian Pacific Railway line through Maine, US, and certain other short mileages which are deemed to be an integral part of the Canadian railway system. Sections of United States railways operating into Canada are regarded as Canadian railways and are included. Freight carried by the Cartier Railway is included in this table; however, financial data for this railway are not available for inclusion in the financial tables.

*Excludes traffic moved in railway-operated containers and trailers.

*Includes express-rated traffic.

15.5 Capital invested in railway road and equipment property, 1968-72 (thousand dollars)

Investment	1968	1969	1970	1971	1972
Road	98,532	238,542	142,584	172,002	176,137
Equipment	25,377	44,643	43,599	11,654	Cr. 53,720
General	1,139	1,611	1,616	2,227	4,405
Undistributed ¹	60,710	Cr. 4,333	Cr. 24,901	16,600	Cr. 2,637
CNR non-rail property	6,285	4,021	3,889	5,312	5,379
CPR	45,074	Cr. 8,714	Cr. 21,955	Cr. 231	Cr. 16,189
Other " "	9,351	360	Cr. 6,835	11,519	8,172
Total	185,758	280,463	162,897	202,483	124,185
Cumulative investment to Dec. 31	{ 7,780,572 7,785,980 ²	{ 8,066,442 8,092,143 ³	{ 8,255,040 8,259,309 ⁴	8,461,792	8,585,978

¹Credit entries in this table result when the annual "write-offs" are greater than the annual investment in any category.

²Restated to reflect transfer of certain non-rail property of one railway to a subsidiary company.

³Restated to include Government of Ontario (GO) transit, not previously reported.

⁴Restated to reflect absorption of subsidiary operations into property accounts of one railway.

15.6 Capital structure of the Canadian National Railway System as at Dec. 31, 1968-72 (thousand dollars)

Year	Shareholders' capital		Funded debt held by public		Government loans and appropriations—active assets in public accounts	Total
	Government of Canada shareholders' account	Capital stock held by public	Guaranteed by federal and provincial governments	Other		
1968	1,919,098	4,345	1,130,880	2,024	786,657	3,843,004
1969	1,950,991	4,345	1,049,990	2,024	846,788	3,854,138
1970	1,984,424	4,345	1,042,020	2,024	853,390	3,886,202
1971	2,023,540	4,345	816,276	2,024	1,078,195	3,924,380
1972	2,023,540	4,345	809,532	2,024	1,082,453	3,921,894

15.7 Total revenue, operating expenses, net revenue, fixed charges and deficits of the Canadian National Railway System (Canadian and United States operations), 1968-72 (thousand dollars)

Year	Total operating revenue	Total operating expenses	Income before fixed charges	Total fixed charges	Net income or deficit ¹	Cash deficit or surplus ²
1968	1,016,445	989,915	61,413	89,645	Dr. 28,232	Dr. 29,177
1969	1,074,881	1,044,909	73,321	96,908	" 23,587	" 24,646
1970	1,109,139	1,079,596	68,387	98,735	" 30,348	" 29,709
1971	1,211,551	1,175,301	70,014	91,574	" 21,560	" 24,268
1972	1,334,047	1,293,081	76,476	90,177	" 13,701	" 17,822

¹Includes appropriations for insurance fund.²Contributed by or paid to the Government of Canada.**15.8 Railway revenues and expenses, 1968-72**

Item and year	Total revenues \$'000	Total expenses (before fixed charges) \$'000	Ratio of expenses to revenues %	Per mile of line			Freight revenue per freight-train mile \$
				Revenues \$	Expenses \$	Net revenues \$	
All railways							
1968	1,528,962	1,437,736	94.03	35,575	33,453	2,122	21.18
1969	1,583,802	1,496,126	94.46	36,474	34,455	2,019	22.10
1970	1,679,759	1,573,579	93.68	38,357	35,932	2,425	22.91
1971	1,805,661	1,698,206	92.07	41,072	38,628	2,444	24.56
1972	1,940,594	1,842,575	93.24	44,079	41,853	2,226	25.33
CNR							
1968	781,192	753,143	96.41	34,372	33,137	1,235	20.36
1969	827,212	791,513	95.68	35,710	34,169	1,541	21.32
1970	852,178	807,986	94.81	36,317	34,434	1,883	22.06
1971	923,012	888,808	96.26	39,388	37,929	1,459	23.84
1972	1,017,510	988,813	97.13	43,614	42,384	1,230	25.71
CPR							
1968	563,323	521,798	92.63	34,860	32,290	2,570	20.88
1969	580,992	546,105	94.00	35,951	33,793	2,158	21.82
1970	616,846	578,262	93.75	38,230	35,839	2,391	22.33
1971	659,912	613,921	89.45	40,998	38,141	2,857	23.82
1972	711,168	653,184	87.55	44,195	40,592	3,603	25.60

15.9 Road and street mileage classified by type and by province, 1971

Province or territory and jurisdiction	Surfaced		Gravel	Other	Earth	Total
	Rigid pavement	Flexible pavement				
FEDERAL AND PROVINCIAL JURISDICTION	2,602	76,161	190,425	4,198	42,435	315,821
Newfoundland	—	1,757	3,831	—	220	5,808
Prince Edward Island	833	822	985	—	611	3,251
Nova Scotia	6	5,159	10,406	—	76	15,647
New Brunswick	—	5,405	7,530	—	15	12,950
Quebec	232	16,500	24,098	—	13,386	54,216
Ontario	1,216	19,939	49,228	4,198	3,155	77,736
Manitoba	301	4,357	7,490	—	—	12,148
Saskatchewan	—	8,053	4,210	—	1,546	13,809
Alberta	6	6,501	64,681	—	17,049	88,237
British Columbia	8	7,638	14,696	—	6,377	28,719
Yukon Territory and Northwest Territories	—	30	3,270	—	—	3,300

15.9 Road and street mileage classified by type and by province, 1971 (concluded)

Province or territory and jurisdiction	Surfaced				Earth	Total
	Rigid pavement	Flexible pavement	Gravel	Other		
MUNICIPAL JURISDICTION	6,881	32,980	91,475	176	70,985	202,497
Newfoundland	7	470	627	2	31	1,137
Prince Edward Island	16	98	27	—	—	141
Nova Scotia	75	954	237	24	2	1,292
New Brunswick	50	828	114	6	19	1,017
Quebec	1,970	7,801	1,851	3	274	11,899
Ontario	2,686	11,552	6,013	43	565	20,859
Manitoba	1,258	540	20,380	37	12,812	35,027
Saskatchewan	195	1,590	56,658	—	56,374	114,817
Alberta	473	2,667	2,808	39	733	6,720
British Columbia	151	6,451	2,702	10	171	9,485
Yukon Territory and Northwest Territories	—	29	58	12	4	103

15.10 Construction, maintenance and administration expenditure on roads and streets, by province, years ended Mar. 31, 1971 and 1972 (thousand dollars)

Item and province or territory	Construction		Maintenance and administration		Total expenditure	
	1971 ¹	1972	1971 ¹	1972	1971 ¹	1972
EXPENDITURE ON PROVINCIAL AND FEDERAL ROADS^{2,3}	804,706	999,714	422,144³	468,134	1,226,850³	1,467,848
Newfoundland	31,616	38,426	16,312	17,052	47,928	55,478
Prince Edward Island	6,357	5,907	4,898	4,965	11,255	10,872
Nova Scotia	51,242	55,113	23,978	24,425	75,220	79,538
New Brunswick	51,205	38,168	25,296	28,267	76,501	66,435
Quebec	221,727	363,592	108,100	122,169	329,827	485,761
Ontario	217,755	226,793	113,553	160,644	331,308	387,437
Manitoba	27,317	29,294	16,845	19,850	44,162	49,144
Saskatchewan	53,493	52,331	16,321	18,485	69,814	70,816
Alberta	57,783	68,470	17,377	19,125	75,160	87,595
British Columbia	67,686	105,658	66,907	38,132	134,593	143,790
Yukon Territory and Northwest Territories	18,525	15,962	12,357	15,020	30,882	30,982
EXPENDITURE ON MUNICIPAL ROADS²	436,609	501,797	514,119	565,500	950,728	1,067,297
Newfoundland	1,216	3,114	3,567	5,580	4,783	8,694
Prince Edward Island	359	280	662	690	1,021	970
Nova Scotia	5,401	6,493	6,546	8,488	11,947	14,981
New Brunswick	6,254	4,491	6,035	7,745	12,289	12,236
Quebec	100,812	70,813	155,148	136,984	255,960	207,797
Ontario	194,366	256,755	206,418	258,757	400,784	515,512
Manitoba	15,977	18,747	23,097	21,796	39,074	40,543
Saskatchewan	18,084	22,893	37,684	36,496	55,768	59,389
Alberta	61,766	72,170	48,489	53,448	110,255	125,618
British Columbia	32,094	45,502	25,891	34,826	57,985	80,328
Yukon Territory and Northwest Territories	280	539	582	690	862	1,229

¹Includes small amounts paid by private companies and other organizations in connection with railway grade crossings and overpasses.

²Provincial and federal subsidies to municipalities amounted to \$268 million in 1970-71 and \$327 million in 1971-72 and should be added to provincial and federal expenditures and subtracted from municipal expenditures to arrive at net expenditures for the respective levels of government.

³Includes federal administrative costs re Trans-Canada Highway, not allocated by province, amounting to \$200,000 in 1970-71.

15.11 Motor vehicles registered¹, by province, 1968-72

Province or territory	1968	1969	1970	1971	1972
Newfoundland	108,220	112,027	118,641	129,200	140,650
Prince Edward Island	37,152	38,812	40,233	42,691	45,430
Nova Scotia	276,609	314,547	269,815	310,383	304,028
New Brunswick	198,406	199,980	201,274	216,710	235,108
Quebec	1,888,934	1,998,001	2,115,126	2,279,722	2,589,351
Ontario	2,869,588	2,953,789	3,047,599	3,209,862	3,382,497
Manitoba	380,488	394,975	403,187	419,314	428,360
Saskatchewan	464,017	472,363	464,405	464,924	496,214
Alberta	703,151	735,729	768,759	813,395	864,397
British Columbia	941,935	1,014,301	1,046,697	1,115,028	1,191,953
Yukon Territory	11,821	11,855	11,371	11,796	11,621
Northwest Territories	6,756	7,781	8,474	9,111	11,158
Canada	7,887,077	8,254,160	8,495,581	9,022,136	9,700,767

¹Registrations given here include passenger cars, trucks, buses, motorcycles, service cars, etc., but not trailers or dealer licences.

15.12 Types of motor vehicles registered, by province, 1972

Province or territory	Passenger cars ¹	Commercial cars, trucks, etc. ²	Buses	Motor-cycles	Total
Newfoundland	113,300	25,600	^a	1,750	140,650
Prince Edward Island	34,231	10,075	318	806	45,430
Nova Scotia	229,034	69,206	860	4,928	304,028
New Brunswick	185,183	43,865	1,392	4,668	235,108
Quebec	1,871,802	589,340	16,340	111,869	2,589,351
Ontario	2,848,907	461,600	14,263	57,727	3,382,497
Manitoba	326,848	95,142	357	6,013	428,360
Saskatchewan	292,487	193,803	4,050	5,874	496,214
Alberta	588,399	246,440	5,030	24,528	864,397
British Columbia	906,268	256,313	^a	29,372	1,191,953
Yukon Territory	5,942	5,140	108	431	11,621
Northwest Territories	4,874	5,665	84	535	11,158
Canada	7,407,275	2,002,189	42,802	248,501	9,700,767

¹Includes taxis.²Includes service cars, road tractors, farm tractors, etc.^aIncluded with trucks.**15.13 Provincial revenue from the registration and operation of motor vehicles, by province, year ended Mar. 31, 1972 (dollars)**

Province or territory	Passenger automobile licences	Truck, bus, trailer and other vehicle licences	Motor-cycle licences	Chauffeur, driver and dealer licences ¹	Public service vehicle tax	Motive fuel taxes	Total ²
Newfoundland	5,199,596	^a	^a	595,586	143,715	25,985,834	32,619,595
Prince Edward Island	1,017,181	542,632	3,064	139,374	50,428	6,703,227	8,629,877
Nova Scotia	7,182,567	5,951,018	^a	1,014,798	241,295	45,725,459	61,660,319
New Brunswick	6,500,204	4,492,071	46,636	564,028	—	37,654,352	50,343,363
Quebec	58,703,634	46,416,309	1,118,690	6,340,079	3,393,098	342,110,153	463,421,906
Ontario	99,051,782	66,329,192	734,737	7,444,248	7,290,616	486,660,257	697,048,445
Manitoba	6,542,209	3,306,541	31,029	1,607,211	3,169,876	50,947,281	66,218,563
Saskatchewan	6,334,042	7,743,109	143,033	1,054,311	—	54,939,230	72,564,223
Alberta	11,875,669	14,048,277	^a	2,795,185	339,219	90,868,880	123,899,368
British Columbia	19,232,384	19,768,684	382	1,417,540	627,953	116,906,201	162,105,542
Yukon Territory	137,711	232,015	1,336	35,675	196,259	2,341,390	3,049,143
Northwest Territories	322,807	^a	^a	41,268	—	2,588,468	2,952,543
Canada	222,099,786	168,829,848	2,078,907	23,049,303	15,452,459	1,263,430,732	1,744,512,887

¹Operator licences are issued for different periods in different provinces.²Includes other items not shown such as transfer of motor vehicles, garage and service station licences, and fines for infractions of motor vehicle laws.^aIncluded with passenger automobiles.^aIncluded with other vehicles.**15.14 Sales of motive fuels, by province, 1968-72 (thousand gallons)**

Province or territory	1968	1969	1970	1971	1972
Gasoline and liquefied petroleum gases					
Newfoundland	74,292	76,961	84,127	92,432	102,301
Prince Edward Island	26,035	27,979	29,980	31,458	33,456
Nova Scotia	163,869	176,437	187,246	196,095	208,716
New Brunswick	142,285	154,164	166,477	172,391	188,767
Quebec	1,258,472	1,318,121	1,386,548	1,444,404	1,538,091
Ontario	1,957,921	2,079,405	2,160,216	2,224,647	2,388,938
Manitoba	259,581	270,971	283,629	287,080	335,621
Saskatchewan	348,403	346,460	341,941	357,584	362,060
Alberta	523,685	551,733	578,914	596,970	634,781
British Columbia	558,722	598,328	634,220	675,806	719,159
Yukon Territory					10,547
Northwest Territories	13,994	16,778	19,377	19,683	12,361
Total, gross sales	5,327,260	5,617,336	5,872,674	6,098,550	6,534,798
Refunds and exemptions	569,184	589,072	584,819	579,523	600,226
Total, net sales	4,758,076	5,028,264	5,287,854	5,519,027	5,934,572
Diesel oil					
Total, net sales	343,414	388,116	467,955	549,780	706,638

15.15 Vessels entered at Canadian ports, 1968-72

Year	In international seaborne shipping		In coastwise shipping		Total	
	Vessels	Registered net tons	Vessels	Registered net tons	Vessels	Registered net tons
1968	26,761	102,055,092	89,154	90,767,420	115,915	192,822,512
1969	25,082	98,632,758	88,543	93,883,371	113,625	192,516,129
1970	25,384	108,575,133	80,331	100,935,295	105,715	209,510,428
1971	24,970	114,252,881	68,083	96,274,780	93,053	210,527,661
1972	24,771	121,535,914	63,438	92,675,867	88,209	214,211,781

15.16 Cargoes loaded and unloaded at principal Canadian ports¹ from vessels in international seaborne and coastwise shipping, by province, 1972 with total for 1971 (tons)

Province and port	International		Coastwise		Total 1972	Total 1971
	Loaded	Unloaded	Loaded	Unloaded		
NEWFOUNDLAND	<i>1,537,190</i>	<i>1,549,896</i>	<i>1,324,390</i>	<i>2,751,158</i>	<i>7,162,634</i>	<i>6,767,672</i>
St. John's	13,758	168,677	155,759	812,236	1,150,430	913,325
Stephenville	680,133	10,917	117,653	305,370	1,114,073	633,132
Holyrood	37,033	642,274	303,121	30,913	1,013,341	1,401,551
Corner Brook	250,229	117,510	22,675	368,425	758,839	909,377
Botwood	390,450	91,527	—	96,558	578,535	521,732
Port aux Basques	297	795	54,312	467,432	522,836	507,766
PRINCE EDWARD ISLAND	<i>62,778</i>	<i>45,594</i>	<i>57,572</i>	<i>486,766</i>	<i>652,710</i>	<i>661,058</i>
Charlottetown	11,094	35,794	53,232	460,491	560,611	564,771
NOVA SCOTIA	<i>10,128,214</i>	<i>10,488,729</i>	<i>3,821,746</i>	<i>2,305,922</i>	<i>26,744,611</i>	<i>21,537,109</i>
Halifax	3,685,297	5,434,442	1,885,317	710,880	11,715,936	11,042,015
Port Hawkesbury	3,569,889	4,782,478	813,266	60,468	9,226,101	4,685,472
Hantsport	1,754,920	8,213	15	—	1,763,148	1,363,627
Sydney	49,117	233,250	23,049	1,178,806	1,484,222	1,911,589
Little Narrows	767,637	—	397,322	—	1,164,959	1,016,586
North Sydney	10,378	390	465,187	67,487	543,442	526,501
NEW BRUNSWICK	<i>3,328,226</i>	<i>6,392,910</i>	<i>1,860,681</i>	<i>1,288,998</i>	<i>12,870,815</i>	<i>10,140,252</i>
Saint John	2,346,772	6,019,091	1,818,433	133,650	10,317,946	7,816,454
Dalhousie	590,827	72,206	—	298,139	961,172	866,781
Newcastle	262,832	13,695	50	260,063	536,640	583,703
QUEBEC	<i>47,409,357</i>	<i>19,619,421</i>	<i>13,620,637</i>	<i>21,646,777</i>	<i>102,296,192</i>	<i>104,198,602</i>
Montreal	4,738,931	5,579,023	5,171,815	10,024,097	25,513,866	22,063,972
Sept îles—Pointe-Noire	17,779,579	391,785	3,418,681	734,230	22,324,275	26,797,790
Port-Cartier	11,594,837	650,747	38,596	2,804,216	15,088,396	14,416,973
Quebec	4,323,161	5,772,707	1,512,642	3,226,618	14,835,128	10,784,880
Baie-Comeau	3,678,597	1,240,997	181,887	2,724,941	7,826,422	7,834,287
Sorel	2,624,685	608,768	27,560	3,005,102	6,266,115	6,373,962
Port-Alfred	445,959	3,589,392	4,439	472,954	4,512,744	4,646,777
Trois-Rivières	1,325,966	781,375	96,381	1,739,313	3,943,035	3,590,181
Havre-Saint-Pierre	303,668	—	1,665,485	22,193	1,991,346	2,894,941
Contrecoeur	336,567	840,010	96,389	73,883	1,346,849	1,064,661
Forestville	—	—	794,085	39,090	833,175	930,576
Chicoutimi	—	18,354	966	710,085	729,405	628,269
ONTARIO	<i>10,741,631</i>	<i>24,971,426</i>	<i>26,093,133</i>	<i>18,201,081</i>	<i>80,007,271</i>	<i>75,667,724</i>
Thunder Bay	4,533,979	148,155	17,599,699	812,567	23,094,400	21,023,469
Hamilton	350,662	7,619,934	219,114	4,491,278	12,680,988	11,985,793
Sarnia	521,392	4,607,963	2,351,564	604,621	8,085,540	7,966,059
Sault Ste Marie	212,383	2,755,154	185,190	1,764,126	4,916,853	4,491,546
Toronto	267,905	2,298,190	122,317	1,579,515	4,267,927	4,236,259
Lakeview (Port Credit)	93,700	3,499,660	130,433	72,562	3,796,355	4,245,797
Windsor—Walkerville	471,370	844,706	750,665	559,325	2,626,066	3,165,753
Clarkson	172,750	12,991	155,451	2,185,809	2,527,001	2,251,754
Port Colborne	1,064,008	195,080	181,524	789,454	2,230,066	1,865,206
Colborne	—	—	2,042,550	—	2,042,550	1,738,500
Goderich	439,465	—	781,795	307,783	1,529,043	3,200,971
Pictou	916,577	76,273	204,726	84,784	1,282,360	1,209,460
Little Current	564,924	332,197	11,586	39,642	948,349	1,302,540
Midland	—	—	—	829,563	829,563	591,426
Depot Harbour	762,895	—	—	—	762,895	730,765
Prescott	16,800	22,885	109,931	436,802	586,418	504,991
Parry Sound	—	85,722	—	475,435	561,157	511,238
Kingston	16,551	5,925	93,273	445,149	560,898	443,783
Michipicoten Harbour	—	304,895	156,082	67,533	528,510	592,871
MANITOBA	<i>721,256</i>	<i>40,486</i>	<i>12,223</i>	<i>2,345</i>	<i>776,310</i>	<i>739,513</i>
Churchill	721,256	40,486	12,223	2,345	776,310	739,513
BRITISH COLUMBIA	<i>35,187,027</i>	<i>5,223,819</i>	<i>14,195,803</i>	<i>14,195,803</i>	<i>68,802,452</i>	<i>68,258,346</i>
Vancouver ²	24,358,370	2,918,674	3,546,196	4,074,491	34,897,731	26,909,433
New Westminster	727,760	352,108	994,180	946,177	3,020,225	3,203,892
Victoria	1,412,503	284,065	236,747	575,899	2,509,214	2,633,885
Duncan Bay—Campbell River	616,941	176,888	179,295	1,305,277	2,278,401	1,860,302
Nanaimo	1,062,039	145,323	128,181	713,194	2,048,737	2,314,924
Powell River	283,559	127,278	540,765	829,215	1,780,817	1,750,473
Britannia Beach	54,938	2,300	1,541,616	131,661	1,730,515	1,413,091
Crofton	842,917	76,624	28,729	742,541	1,690,811	1,695,689
Prince Rupert	957,550	177,074	231,483	193,453	1,559,560	1,256,411
Kitimat	256,560	527,977	516,598	52,522	1,353,657	1,285,883
Port Alberni	905,100	59,804	27,527	270,949	1,263,380	1,140,919
Ladysmith	80,317	25,505	594,568	55,527	755,917	1,412,619
Qatstino	210,100	88,061	203,499	228,066	729,726	638,310
Marble Bay	610,769	—	79,890	400	691,059	858,325
Tasu	664,701	—	—	10,426	675,127	1,450,696
Vanguard	—	—	241,726	377,345	619,071	388,875
Chemainus	294,211	71,533	145,665	88,225	599,634	845,093
Blubber Bay	436,732	—	90,398	222	527,352	598,881
NORTHWEST TERRITORIES	—	28,392	409	107,744	136,545	119,372
Total	109,115,679	68,360,673	60,986,594	60,986,594	299,449,540	288,089,648

¹Only ports handling over 500,000 tons are listed.

²Includes Roberts Bank.

15.17 Principal commodities¹ in water-borne cargo loaded and unloaded at ports handling the largest tonnages in 1972 (tons)

Port and commodity	International		Coastwise		Total
	Loaded	Unloaded	Loaded	Unloaded	
VANCOUVER²	24,358,370	2,918,674	3,546,196	4,074,491	34,897,731
Coal, bituminous	8,316,415	—	—	—	8,316,415
Wheat	5,323,035	—	780	—	5,323,815
Lumber and timber	1,620,009	7,612	224,396	278,601	2,130,618
Sulphur in ores	1,644,352	—	10,397	—	1,654,749
Potash	1,654,276	—	—	—	1,654,276
Fuel oil	164,612	213,744	1,159,405	920	1,538,681
Barley	1,223,150	—	—	240	1,223,390
Pulpwood	260,395	11,850	850,940	39,782	1,162,967
Logs	59,289	20,421	37,215	1,024,207	1,141,132
Rapeseed	692,959	—	—	—	692,959
Containerized freight	250,592	316,880	—	—	567,472
Sand and gravel	66,311	490,241	—	—	556,552
Gasoline	31,045	—	442,490	10	473,545
Pulp	301,185	—	6,932	144,621	452,738
Newsprint	29,688	—	4,359	372,162	406,209
Salt	5	378,489	13,395	—	391,889
Inorganic chemicals	24,771	4,066	269,475	4,395	302,707
Cement	78,853	5,500	1,721	160,703	246,777
Flaxseed	244,244	—	—	—	244,244
Fertilizers, n.e.s.	203,471	3,220	4,119	9	210,819
Waste and scrap, n.e.s.	41,985	7,593	88,971	7,336	145,885
Asbestos	110,717	8,689	—	—	119,406
Passenger autos and chassis	69	115,282	1	—	115,352
Building paper and board	20,641	920	83,649	3,639	108,849
Limestone	28,044	—	1,042	73,678	102,764
Other commodities not listed	1,968,257	1,334,167	346,909	1,964,188	5,613,521
THUNDER BAY	4,533,979	148,155	17,599,699	812,567	23,094,400
Wheat	220,878	—	10,108,765	—	10,329,643
Iron ore and concentrates	2,384,922	—	2,898,840	—	5,283,762
Barley	438,880	—	3,783,214	—	4,222,094
Oats	105,558	—	402,041	—	507,399
Rapeseed	407,369	—	83,756	—	491,325
Flaxseed	341,227	—	44,391	—	385,618
Fuel oil	—	—	—	288,613	288,613
Gasoline	—	—	—	186,952	186,952
Hulls, screenings and chaff	68,191	—	104,422	—	172,613
Concentrated and complete feeds	160,400	—	—	1,272	161,672
Newsprint	153,693	—	56	—	153,749
Rye	89,103	—	31,866	—	120,969
Other commodities not listed	163,758	148,155	142,348	335,730	789,991
SEPT ÎLES—POINTE-NOIRE	17,779,579	391,785	3,418,681	734,230	22,324,275
Iron ore and concentrates	17,729,592	—	3,392,966	—	21,122,558
Fuel oil	—	230,533	706	385,151	616,390
Bentonite	—	121,598	—	—	121,598
Other commodities not listed	49,987	39,654	25,009	349,079	463,729
MONTREAL	4,738,931	5,579,023	5,171,815	4,852,282	20,342,051
Fuel oil	834,958	1,964,955	3,042,017	261,082	6,103,012
Wheat	1,528,721	28,440	2,006	2,522,330	4,081,497
Gasoline	46	242,993	1,298,693	123,550	1,665,282
Containerized freight	697,795	527,753	—	—	1,225,548
Barley	352,780	—	2,842	638,034	993,656
Salt	2	105,006	—	437,116	542,124
Gypsum	—	—	—	360,139	360,139
Raw sugar	—	345,574	—	—	345,574
Coal, bituminous	—	300,965	—	—	300,965
Crude petroleum	—	296,076	—	—	296,076
Corn	72,476	212,638	—	4,984	290,098
Cement	237,623	449	47,523	—	285,595
Petroleum and coal products, n.e.s.	12,282	80,127	47,281	126,770	266,460
Plate and sheet steel	17,469	111,988	22,228	59,116	210,801
Structural shapes	5,125	113,321	71,012	5,915	195,373
Lubricating oil and grease	341	12	173,210	12,285	185,848
Organic chemicals, n.e.s.	92,721	83,031	3,557	49	179,358
Machinery, n.e.s.	22,897	24,739	51,828	15,329	114,793
Bars and rods, steel	3,213	88,196	11,464	11,645	114,518
Molasses, crude	—	111,837	—	—	111,837
Manganese ore	—	66,705	—	33,985	100,690
Other commodities not listed	860,482	874,218	398,154	239,953	2,372,807
PORT-CARTIER	11,594,837	650,747	38,596	2,804,620	15,088,800
Iron ore and concentrates	8,330,352	—	35,886	—	8,366,238
Wheat	1,762,797	109,026	—	1,655,588	3,527,411
Barley	1,084,778	63,295	—	1,031,162	2,179,235
Corn	365,504	347,033	—	28,059	740,596
Fuel oil	699	79,918	—	59,105	139,722
Other commodities not listed	50,707	51,475	2,710	30,706	135,598
QUEBEC	4,323,161	5,772,707	1,512,642	3,226,618	14,835,128
Crude petroleum	—	4,028,243	—	—	4,028,243
Fuel oil	1,380,347	766,819	1,174,633	543,885	3,865,684
Wheat	619,173	23,622	12,915	771,828	1,427,538
Barley	458,404	55,600	3,093	500,656	1,017,753
Gasoline	15,662	73,313	270,567	441,925	801,467
Pulpwood	613	—	350	798,800	799,763
Containerized freight	343,693	351,814	—	—	695,507

15.17 Principal commodities¹ in water-borne cargo loaded and unloaded at ports handling the largest tonnages in 1972 (tons) (continued)

Port and commodity	International		Coastwise		Total
	Loaded	Unloaded	Loaded	Unloaded	
QUEBEC (concluded)					
Zinc ore and concentrates	432,441	—	—	—	432,441
Corn	123,145	235,346	—	—	358,491
Newsprint	240,746	—	—	—	240,746
Cement	181,760	—	12,443	—	194,203
Salt	5	114,959	—	33,370	148,334
Asbestos	111,923	—	—	—	111,923
Other commodities not listed	415,249	122,991	38,641	136,154	713,035
HAMILTON	350,662	7,619,934	219,114	4,491,278	12,680,988
Coal, bituminous	—	5,123,275	—	—	5,123,275
Iron ore and concentrates	—	—	—	3,925,252	3,925,252
Fuel oil	—	176,702	5,884	284,621	467,207
Plate and sheet steel	160,433	95,397	104,701	2,512	363,043
Gasoline	—	—	—	144,989	144,989
Soybeans	—	135,945	—	4,641	140,586
Sand and gravel	—	123,763	—	20	123,783
Other commodities not listed	190,229	1,964,852	108,529	129,243	2,392,853
HALIFAX	3,685,297	5,434,442	1,885,317	710,880	11,715,936
Crude petroleum	—	4,156,979	—	—	4,156,979
Gypsum	2,271,601	—	5,868	—	2,277,469
Fuel oil	33,581	525,450	1,326,197	322,409	2,207,637
Containerized freight	546,414	523,193	—	—	1,069,607
Wheat	469,534	—	1,860	186,976	658,370
Gasoline	12,051	1,902	498,575	140,018	652,546
Other commodities not listed	352,116	226,918	52,817	61,477	693,328
SAINT JOHN	2,346,772	6,019,091	1,818,433	133,650	10,317,946
Crude petroleum	109,615	5,214,745	—	—	5,324,360
Fuel oil	249,938	35,150	1,410,543	75,509	1,771,140
Wheat	611,018	—	—	—	611,018
Gasoline	37,688	—	290,378	56,768	384,834
Containerized freight	174,667	189,432	—	—	364,099
Raw sugar	—	314,672	—	—	314,672
Pulp	270,472	7,375	—	—	277,847
Wheat flour	246,448	12	—	—	246,460
Newsprint	232,950	—	—	—	232,950
Other commodities not listed	413,976	257,705	117,512	1,373	790,566
PORT HAWKESBURY	3,569,889	4,782,478	813,266	60,468	9,226,101
Crude petroleum	46,452	4,668,206	—	—	4,714,658
Fuel oil	2,472,024	98,869	606,781	54,842	3,232,516
Gypsum	727,204	—	—	—	727,204
Gasoline	20,781	258	200,096	5,626	226,761
Petroleum and coal products, n.e.s.	218,766	—	—	—	218,766
Other commodities not listed	84,662	15,145	6,389	—	106,196
SARNIA	521,392	4,607,963	2,351,564	604,621	8,085,540
Coal, bituminous	—	3,912,676	—	—	3,912,676
Fuel oil	367,891	17,503	1,127,653	141,301	1,654,348
Gasoline	—	—	839,893	1,148	841,041
Limestone	—	424,310	—	—	424,310
Wheat	13,683	—	139,854	262,775	416,312
Lubricating oil and grease	—	—	20,050	144,071	164,123
Inorganic chemicals, n.e.s.	8,302	—	138,320	—	146,622
Organic chemicals, n.e.s.	58,514	76,420	95	4,118	139,147
Petroleum coal products	5,728	56,416	25,263	20,525	107,932
Other commodities not listed	67,274	120,638	60,434	30,683	279,029
BAIE-COMEAU	3,678,597	1,240,997	181,887	2,724,941	7,826,422
Wheat	1,799,310	463,180	—	1,548,151	3,810,641
Barley	856,868	2,491	—	895,237	1,745,596
Newsprint	415,379	—	451	—	415,830
Soybeans	168,251	205,019	—	3,363	376,633
Pulpwood	143,600	—	160,040	—	303,640
Fuel oil	—	130,716	—	120,711	251,427
Corn	172,769	77,136	—	—	249,905
Alumina and bauxite ores	—	246,978	—	—	246,978
Other commodities not listed	122,420	115,477	21,396	157,479	416,772
SOREL	2,624,685	608,768	27,560	3,005,102	6,266,115
Wheat	1,006,506	—	15,000	931,710	1,953,216
Titanium ore	31,360	—	—	1,663,021	1,694,381
Slag, drosses, by-products	804,397	—	—	—	804,397
Barley	278,920	—	—	261,540	540,460
Pig iron	466,743	—	8,679	—	475,422
Coal, n.e.s.	—	294,852	—	—	294,852
Phosphate rock	—	177,908	—	—	177,908
Fuel oil	—	51,990	—	91,487	143,477
Other commodities not listed	36,759	84,018	3,881	57,344	182,002
SAULT STE MARIE	212,383	2,755,154	185,190	1,764,126	4,916,853
Coal, bituminous	—	2,278,961	—	—	2,278,961
Iron ore and concentrates	—	58,943	—	1,337,325	1,396,268
Limestone	—	348,706	—	—	348,706
Fuel oil	—	45,642	—	238,287	283,929
Plate and sheet steel	50,132	150	105,192	1,662	157,136
Gasoline	—	—	—	132,997	132,997
Other commodities not listed	162,251	22,752	79,998	53,855	318,856

15.17 Principal commodities¹ in water-borne cargo loaded and unloaded at ports handling the largest tonnages in 1972 (tons) (concluded)

Port and commodity	International		Coastwise		Total
	Loaded	Unloaded	Loaded	Unloaded	
PORT-ALFRED	445,959	3,589,392	4,439	472,954	4,512,744
Alumina and bauxite ores	—	2,662,400	—	—	2,662,400
Fuel oil	—	556,051	—	—	556,051
Coke	—	287,283	—	—	287,283
Newsprint	232,321	—	—	—	232,321
Pulpwood	—	—	—	186,702	186,702
Fluorspar	—	—	—	155,594	155,594
Inorganic chemicals, n.e.s.	977	79,844	—	66,133	146,954
Aluminum	125,613	1,105	507	—	127,225
Other commodities not listed	87,048	2,709	3,932	64,525	158,214
TORONTO	267,905	2,298,190	122,317	1,579,515	4,267,927
Coal, bituminous	—	830,994	—	—	830,994
Fuel oil	33,921	229,576	60,935	410,776	735,208
Salt	35	94,488	—	287,498	382,021
Cement	4	31	—	369,222	369,257
Soybeans	60	183,384	—	34,154	217,598
Wheat	—	—	—	215,957	215,957
Raw sugar	—	201,383	—	—	201,383
Barley	10	23,098	—	101,769	124,877
Other commodities not listed	233,875	735,236	61,382	160,139	1,190,632
TROIS-RIVIÈRES	1,325,966	781,375	96,381	1,739,313	3,943,035
Wheat	866,760	76,143	63,212	736,311	1,742,426
Fuel oil	44,367	472,981	28,767	347,842	893,957
Pulpwood	—	—	350	295,295	295,645
Barley	83,274	—	2,382	173,995	259,651
Newsprint	174,176	—	—	—	174,176
Salt	—	23,024	—	79,262	102,286
Other commodities not listed	157,389	209,227	1,670	106,608	474,894
LAKEVIEW (PORT CREDIT)	93,700	51,149	130,433	3,521,073	3,796,355
Coal, bituminous	—	—	—	3,448,511	3,448,511
Other commodities not listed	93,700	51,149	130,433	72,562	347,844
NEW WESTMINSTER	727,760	352,108	994,180	946,177	3,020,225
Sand and gravel	—	4,050	753,491	350,510	1,108,051
Pulpwood	225,900	—	156,509	4,060	386,469
Logs	—	—	27,000	294,260	321,260
Cement	32,500	—	2,700	139,833	175,033
Waste and scrap, n.e.s.	144,620	—	11,700	—	156,320
Lumber and timber	74,025	—	31,550	11,697	117,272
Other commodities not listed	250,715	348,058	11,230	145,817	755,820

¹Only commodities totalling over 100,000 tons are listed.²Includes Roberts Bank.**15.18 Vessels and tonnage handled by harbours administered by the National Harbours Board, 1972 and 1973**

Port or elevator and year		Vessel arrivals	Vessel tonnage (gross)	Cargo tonnage	Grain elevator shipments bu
St. John's, Nfld.	1972	2,209	4,194,000	1,170,964	...
	1973	1,912	3,976,000	1,153,335	...
Halifax	1972	2,537	15,653,634	12,186,272	21,801,617
	1973	2,518	17,146,643	14,062,771	17,334,025
Saint John	1972	2,090	14,720,605	5,985,330	20,691,195
	1973	1,879	14,080,848	6,160,078	14,887,492
Belledune, NB	1972	34	267,814	331,474	...
	1973	44	420,588	572,639	...
Sept Îles	1973	1,548	20,508,248	30,481,894	...
Chicoutimi	1972	153	511,723	725,050	...
	1973	160	473,152	685,842	...
Baie des Ha! Ha!	1973	571	3,412,000	4,284,000	...
Quebec	1972	1,932	13,160,000	15,580,353	70,689,819
	1973	2,086	14,412,000	16,675,221	89,037,781
Trois-Rivières	1972	1,129	4,930,000	4,135,200	40,511,799
	1973	905	4,552,000	4,150,184	45,084,410
Montreal	1972	5,358	41,922,000	22,144,328	124,838,319
	1973	5,119	39,316,000	23,918,844	147,850,548
Prescott	1972	50	454,058	600,741	14,016,619
	1973	63	512,652	501,697	12,552,684
Port Colborne	1972	38	251,640	351,371	6,547,482
	1973	25	136,499	141,856	4,872,129
Churchill	1972	48	508,424	771,603	26,266,241
	1973	57	445,796	577,682	19,546,855
Vancouver	1972	18,093	39,801,513	36,712,508	286,711,008
	1973	17,948	46,770,640	42,089,028	291,152,333
Prince Rupert	1972	989	2,419,312	5,126,153	19,458,062
	1973	1,236	2,773,000	1,868,122	24,105,381
Total	1972	34,660	138,794,723	102,221,347	631,532,160
	1973	36,071	168,936,066	147,323,193	666,423,638

15.19 Summary statistics of St. Lawrence Seaway traffic¹, 1972 and 1973

Item	Upbound				Downbound			
	1972 No. of transits	Cargo tons	1973 No. of transits	Cargo tons	1972 No. of transits	Cargo tons	1973 No. of transits	Cargo tons
Type of vessel								
Ocean								
Cargo	1,223	7,711,065	1,087	6,050,237	1,247	11,831,463	1,092	11,104,685
Tanker	72	695,630	59	535,783	76	292,468	59	292,174
Inland								
Cargo	1,873	15,345,780	1,877	19,183,081	1,824	31,482,353	1,858	31,643,208
Tug and barge	84	441,517	117	876,695	95	135,305	133	200,803
Tanker	631	3,263,163	634	3,008,562	622	563,022	645	1,339,853
Coastal								
Cargo	71	342,191	45	356,369	68	256,414	49	256,275
Tug and barge	31	74,979	42	80,215	35	68,270	21	25,452
Tanker	10	105,222	16	171,458	6	4,408	16	44,198
Non-cargo								
Tug and barge	91	—	147	—	82	—	84	—
All other ²	74	—	136	—	102	—	167	—
Total	4,160	27,979,547	4,160	30,262,400	4,157	44,633,703	4,124	44,906,648
Type of cargo								
Bulk	1,722	20,779,964	1,917	25,071,048	2,690	42,793,212	2,739	43,440,959
General	825	6,297,201	562	4,668,381	151	503,033	117	358,634
Mixed	177	902,382	129	522,971	334	1,337,458	210	1,107,055
Passengers	2	—	3	—	8	—	9	—
In ballast								
Ocean	240	—	338	—	90	—	85	—
Laker	1,005	—	915	—	675	—	700	—
Coastal	26	—	16	—	33	—	22	—
Other	163	—	280	—	176	—	242	—
Type of traffic								
Domestic								
Canada to Canada	1,281	7,417,376	1,265	7,328,311	1,577	16,281,831	1,596	15,415,184
Canada to United States	1,421	11,856,176	1,607	16,091,917	11	39,570	19	62,270
United States to Canada	22	121,562	21	90,552	1,097	15,677,792	1,233	17,674,934
United States to United States	141	177,738	124	169,208	149	510,579	125	357,401
Foreign								
Canada								
Import	235	1,073,985	198	890,908	—	—	—	—
Export	—	—	—	—	318	1,855,463	229	1,316,777
United States								
Import	1,060	7,332,710	945	5,691,504	—	—	—	—
Export	—	—	—	—	1,005	10,268,468	922	10,080,082

¹Combined traffic of the Montreal-Lake Ontario section and the Welland Canal, with duplications eliminated.²Includes naval vessels.**15.20 St. Lawrence Seaway traffic¹ classified by type of cargo, 1972 and 1973**

Commodity	1972		1973	
	Cargo tons	% of total	Cargo tons	% of total
AGRICULTURAL PRODUCTS	25,361,791	34.9	25,891,382	34.4
Wheat	11,405,414	15.8	12,006,117	15.9
Corn	3,842,250	5.3	4,179,795	5.6
Rye	108,682	0.1	730,334	1.0
Oats	456,135	0.6	942,022	1.3
Barley	4,823,655	6.6	3,822,337	5.0
Flour, wheat	142,808	0.2	38,760	0.1
Flour, edible, other	5,260	--	23,903	--
Soybeans	1,967,177	2.7	1,967,480	2.6
Soybean oil, cake and meal	368,271	0.5	400,951	0.5
Beans and peas	53,116	0.1	41,216	0.1
Malt	64,161	0.1	115,237	0.2
Flaxseed	665,660	0.9	314,892	0.4
Other agricultural products	1,459,202	2.0	1,308,338	1.7
ANIMAL PRODUCTS	333,676	0.5	287,550	0.4
Packing house products, edible	57,447	0.1	133,359	0.2
Hides, skins and pelts	79,877	0.1	34,815	--
Other animal products	196,352	0.3	119,376	0.2
MINERAL PRODUCTS	30,798,948	42.4	34,227,596	45.6
Bituminous coal	9,955,037	13.7	8,139,388	10.8
Coke	639,067	0.9	845,095	1.1
Iron ore	16,063,975	22.2	19,996,621	26.7
Aluminum ore and concentrates	101,080	0.1	107,648	0.1
Clay and bentonite	158,448	0.2	216,130	0.3
Gravel and sand	131,526	0.2	38,411	0.1
Stone, ground or crushed	1,102,056	1.5	1,367,833	1.8
Stone, rough	4,976	--	14,094	--
Petroleum, crude	86,641	0.1	799,782	1.1
Salt	1,670,009	2.3	1,538,048	2.0
Phosphate rock	102,934	0.1	40,812	0.1
Other mineral products	783,199	1.1	1,123,734	1.5

15.20 St. Lawrence Seaway traffic¹ classified by type of cargo, 1972 and 1973 (concluded)

Commodity	1972		1973	
	Cargo tons	% of total	Cargo tons	% of total
FOREST PRODUCTS	<i>310,495</i>	<i>0.4</i>	<i>187,077</i>	<i>0.2</i>
Pulpwood	98,132	0.1	60,399	0.1
Other forest products	212,363	0.3	126,678	0.1
MANUFACTURES AND MISCELLANEOUS	<i>15,429,384</i>	<i>21.3</i>	<i>14,347,359</i>	<i>19.1</i>
Gasoline	493,524	0.7	321,135	0.4
Fuel oil	3,712,001	5.0	4,241,314	5.7
Lubricating oils and greases	233,919	0.3	156,876	0.2
Petroleum products, other	64,719	0.1	84,743	0.1
Rubber, crude, natural and synthetic	148,806	0.2	50,168	0.1
Chemicals	494,688	0.7	466,017	0.6
Sodium products	164,711	0.2	160,440	0.2
Tar, pitch and creosote	92,003	0.1	72,146	0.1
Pig iron	181,912	0.3	151,623	0.2
Iron and steel, bars, rods, slabs	286,247	0.4	509,908	0.7
Iron and steel, nails, wire	124,123	0.2	130,201	0.2
Iron and steel, manufactured	5,388,264	7.4	3,723,202	5.0
Machinery and machines	121,377	0.2	94,243	0.1
Cement	199,237	0.3	247,781	0.3
Wood pulp	70,166	0.1	58,192	0.1
Newsprint	223,272	0.3	126,745	0.1
Syrup and molasses	63,636	0.1	72,040	0.1
Sugar	259,648	0.4	285,394	0.4
Food products	327,563	0.5	162,311	0.2
Scrap iron and steel	424,106	0.6	935,078	1.2
Other manufactures and miscellaneous	2,355,462	3.2	2,297,802	3.1
PACKAGE FREIGHT	<i>378,956</i>	<i>0.5</i>	<i>228,084</i>	<i>0.3</i>
Domestic	373,013	0.5	228,077	0.3
Foreign	5,943	--	7	--
Total	72,613,250	100.0	75,169,048	100.0

¹Combined traffic of the Montreal-Lake Ontario section and the Welland Canal, with duplications eliminated.

15.21 St. Lawrence Seaway Authority expenditure, 1971-73 (dollars)

Item	1971	1972	1973
Administration			
Headquarters	2,499,047	2,798,095	3,213,029
Regional	1,959,070	2,061,483	2,383,916
Engineering	1,269,481	1,539,324	1,709,722
Construction Branch	653,523	733,057	985,158
Operation and maintenance			
Salaries and wages	8,940,602	10,042,159	10,530,586
Employee benefits	1,013,062	1,121,412	1,296,388
Maintenance materials and services	4,041,695	4,510,781	5,588,528
Grants in lieu of municipal taxes	800,973	735,215	799,615
Other operation and maintenance expenses	761,707	837,432	1,068,812
Total	21,939,160	24,378,958	27,575,754

15.22 Aircraft landing areas, classified by type of facility and operator, by province, as at Dec. 31, 1973

Type of facility and operator	Nfld.	PEI	NS	NB	Que.	Ont.	Man.	Sask.	Alta.	BC	YT	NWT	Total
Licensed airports													
Ministry of transport	5	1	3	3	11	17	4	2	7	17	3	13	86
Municipal	—	—	1	5	31	26	6	16	28	23	—	1	137
Private	4	—	4	5	34	63	10	14	15	7	—	1	157
Provincial	—	—	1	—	2	1	1	3	6	—	3	2	19
Heliports													
Ministry of Transport	—	1	1	1	—	—	—	—	—	—	—	—	3
Municipal	—	—	—	—	—	—	—	—	1	—	—	—	1
Private	—	—	—	—	10	15	1	—	2	15	2	2	47
Military	—	—	—	1	1	—	—	—	—	—	—	—	2
Unlicensed airports													
Ministry of Transport	2	—	—	—	2	2	1	—	—	8	3	—	18
Municipal	—	—	—	—	5	—	1	13	2	8	—	1	30
Private	4	2	3	11	16	26	35	95	47	77	11	42	369
Provincial	6	—	2	—	5	2	—	6	66	8	11	19	125
Abandoned	1	—	—	1	2	11	6	7	8	2	5	33	76
Licensed seaplane bases													
Ministry of Transport	1	—	—	—	1	—	—	—	—	2	1	1	6
Municipal	—	—	—	—	1	1	—	—	—	4	—	—	6
Private	3	—	2	—	77	92	30	21	2	45	5	16	293
Provincial	—	—	—	—	—	9	4	1	—	1	2	—	17

15.22 Aircraft landing areas, classified by type of facility and operator, by province, as at Dec. 31, 1973 (concluded)

Type of facility and operator	Nfld.	PEI	NS	NB	Que.	Ont.	Man.	Sask.	Alta.	BC	YT	NWT	Total
Unlicensed seaplane bases													
Ministry of Transport	—	—	—	—	—	—	—	—	—	19	1	3	23
Municipal	—	—	—	—	—	—	1	—	—	4	—	—	5
Private	7	—	—	2	4	15	6	2	2	29	3	37	107
Provincial	—	—	—	—	—	3	4	1	1	—	1	1	11
Abandoned	39	1	8	8	28	65	31	17	20	87	6	28	338
Military aerodromes													
DND (land)	—	1	2	2	3	6	2	1	5	1	—	—	23
DND (seaplane)	—	—	—	—	—	1	—	—	—	—	—	1	2
US Navy	1	—	—	—	—	—	—	—	—	—	—	—	1
US Air Force	1	—	—	—	—	—	—	—	—	—	2	18	21
RCMP (seaplane)	—	—	1	—	—	—	—	—	—	—	—	—	1
Total, all aerodromes	74	6	28	39	233	355	143	199	212	357	59	219	1,924
Land bases	22	4	15	27	119	163	65	156	182	165	38	114	1,070
Seaplane bases	50	1	11	10	111	185	76	42	25	191	19	86	807
Military aerodromes	2	1	2	2	3	7	2	1	5	1	2	19	47

15.23 Aircraft movements by class of operation at airports with Ministry of Transport air traffic control towers, 1969-73

Operation	1969	1970	1971	1972	1973
Local operations ¹	2,380,895	2,373,806	2,736,404	2,710,601	2,667,345
Itinerant operations ²	1,820,505	1,889,693	1,999,938	2,234,754	2,586,625
Simulated approaches ³	124,168	111,870	159,034	—	—
Total, movements	4,325,568	4,375,369	4,895,376	4,945,355	5,253,970
Number of towers	46	47	53	55	56

¹Landing or take-off by aircraft that remain at all times within the tower control zone.²Landing or take-off by aircraft that enter or leave the tower control zone.³Missed instrument or practice instrument approaches without landing. Prior to June 1, 1971 simulated approaches were counted at source as only one movement. A further modification effective May 1, 1972 grouped simulated approaches under "local movements" and no longer under "type of operation".**15.24 Summary statistics of commercial air services, 1968-72¹**

Item	1968	1969	1970	1971	1972
Canadian carriers, revenue traffic only					
Unit toll transportation ²					
Departures	'000 401		411	428	469
Hours flown	" 487	489	504	506	531
Miles flown	" 139,393	148,275	160,927	157,962	158,463
Passengers carried	" 8,429	9,153	10,518	11,082	12,557
Passenger-miles	" 7,525,660	8,174,041	9,636,058	9,561,454	10,246,356
Cargo and excess baggage ton-miles	" 117,139	215,009	259,396	285,254	314,249
Mail ton-miles	" 30,716	35,350	38,241	48,701	53,438
Cargo and excess baggage	'000 tons 118	125	157	170	186
Mail carried	" 30	31	33	39	41
Bulk transportation ³					
Departures	'000 380	389	409	439	428
Hours flown	" 428	478	549	545	550
Miles flown	" 42,138	50,994	55,397	58,698	63,800
Passengers carried	" 876	1,111	1,240	1,402	1,523
Passenger-miles	" 643,969	1,309,725	1,915,099	1,941,115	2,010,413
Goods ton-miles	" 18,265	65,209	44,112	48,113	69,478
Freight carried	'000 tons 76	119	115	123	284
Other flying services ⁴					
Hours flown	'000 244	230	199	182	202
Canadian carriers, all services					
Revenue traffic					
Departures	'000 781		820	867	897
Hours flown	" 1,158	1,196	1,253	1,233	1,283
Miles flown	" 181,531	199,269	216,324	216,660	222,465
Passengers carried	" 9,305	10,264	11,758	12,484	14,080
Passenger-miles	" 8,169,629	9,483,725	11,551,156	11,502,569	12,256,769
Goods ton-miles	" 226,121	315,569	341,750	382,068	437,165
Goods carried	'000 tons 224	275	305	332	361
Non-revenue traffic					
Hours flown	'000 43	40	47	40	47
Passenger-miles	" 405,322	..	..	..	..
Goods ton-miles	" 9,488	..	..	..	..
Fuel consumed	'000 gal 397,609	443,414	510,244	519,801	562,440
Oil consumed	" 499	455	359	350	408
Average employees	'000 27	29	29	30	31
Salaries and wages paid	\$'000 214,643	245,434	282,752	304,209	345,236
Operating revenues	" 716,377	702,659	815,796	884,877	1,019,029
Operating expenses	" 576,529	665,578	783,554	828,533	941,212

15.24 Summary statistics of commercial air services, 1968-72 (concluded)¹

Item	1968	1969	1970	1971	1972
Canadian and foreign carriers, all services					
Hours flown '000	1,188	1,229	1,299	1,265	1,314
Miles flown "	192,891	211,883	229,008	228,458	234,487
Passengers carried "	11,875	13,219	14,768	15,723	17,737
Goods carried '000 tons	269	337	367	399	428

¹Although most figures in this table have been taken from the audited reports of commercial air carriers, some preliminary figures have been used.

²Transportation of passengers or goods at a toll per unit.

³Transportation of passengers or goods at a toll per mile or per hour for the entire aircraft.

⁴Comprises flying training, aerial photography, and aerial patrol and inspection.

15.25 Comparative statistics of domestic and international air traffic, 1972P

Item	Canadian airlines		Foreign airlines		Total
	Domestic services	International services	United States ¹	Other foreign ¹	
Unit toll transportation ² , revenue traffic only					
Departures '000	414	55	..	..	..
Hours flown "	391	140	9	21	561
Miles flown "	100,194	58,269	3,193	8,135	169,791
Passengers carried "	9,415	3,141	2,510	962	16,028
Passenger-miles "	6,008,255	5,479,755	149,896	650,895	12,288,801
Goods ton-miles "	167,028	200,660	2,261	42,986	412,935
Goods carried '000 lb.	299,158	157,524	59,118	91,237	607,037
Bulk transportation ³ , revenue traffic only					
Departures '000	413	15	..	..	..
Hours flown "	503	47	..	2	552
Miles flown "	44,758	19,043	81	613	64,495
Passengers carried "	827	696	39	147	1,709
Passenger-miles "	127,407	1,883,007	4,407	37,807	2,052,628
Goods ton-miles "	45,524	23,953	—	581	70,058
Freight carried '000 lb.	242,113	24,621	—	1,373	268,107

¹Hours and miles flown are those flown only over Canada.

²Transportation of passengers or goods at a toll per unit.

³Transportation of passengers or goods at a toll per mile or per hour for the entire aircraft.

Sources

15.1 Canadian Transport Commission.

15.2 - 15.17 Transportation and Communications Division, Industry Statistics Branch, Statistics Canada.

15.18 National Harbours Board.

15.19 - 15.21 St. Lawrence Seaway Authority.

15.22 - 15.25 Transportation and Communications Division, Industry Statistics Branch, Statistics Canada.

Chapter 16

Communications

16.1 Telecommunications

The size, topography and climate of Canada have significantly influenced the development of telecommunications in this country. Vast networks of telephone, telegraph, radio and television facilities are necessary to provide efficient communications between individual Canadians and the rest of the world. As a result Canada possesses a somewhat unique system with telephone and telegraph companies and domestic satellites carrying messages to all parts of the country by microwave, tropospheric scatterwave systems, satellite, land lines and high-frequency radio bands.

The Canadian Telecommunications Carriers Association (CTCA), established in February 1972, provides the framework for co-operation on an industry-wide basis for the major telecommunications carriers in Canada. The Association consists of 23 telecommunications carriers organizations, each represented on the board of directors by a senior officer. It brings together in one organization the Trans-Canada Telephone System and its eight members, The Canadian Independent Telephone Association, nine other telephone companies, and Canadian National and Canadian Pacific Telecommunications, the Canadian Overseas Telecommunication Corporation, and Telesat Canada. CTCA has its headquarters in Ottawa.

The importance of telecommunications in Canada was recognized in the creation of the federal Department of Communications in 1969. The Department carried out a comprehensive inquiry into all aspects of Canada's information system. This "Telecommission" study, completed in the spring of 1971, provided guidelines for formulating national communications policies and programs. Supplementing the study is a report by the Canadian Computer/Communications Task Force charged with making recommendations to assist in formulating legislation concerning the Canadian computer/communications industry. The combination of computer technology and the technology of telecommunications was the latest stage in facilitating a national linking of computers. Since then the concept of multi-user sharing of a central data processing complex has rapidly gained acceptance. The Department has sponsored projects to help high schools and universities use the latest communications and computer systems for exploring computer-assisted learning. One such project is CANUNET, a study being conducted by Canadian universities to see if it is possible to design a computer/communications network to serve the collective needs of universities.

16.1.1 Telecommunications media

16.1.1.1 Voice communications

Telephone service. There are nearly 12 million telephones in service in Canada, more than one for every two Canadians, of which about 11 million are provided by the eight member companies of the Trans-Canada Telephone System, a consortium of Canada's major telephone companies formed in 1931 to pool resources in meeting national telecommunications needs. The companies are Alberta Government Telephones, British Columbia Telephone Company, Bell Canada, Manitoba Telephone System, Maritime Telegraph and Telephone Company Ltd., The New Brunswick Telephone Company, Limited, Newfoundland Telephone Company Limited, and Saskatchewan Telecommunications. The member companies are owned and regulated in a variety of ways. The three companies serving the Prairie Provinces are provincially owned Crown corporations; the other five companies are investor-owned. Bell Canada and BC Tel operate under federal charter; the others are regulated by provincial agencies.

Almost a million telephones are provided by Edmonton telephones, Island Telephone Co. Ltd., Northern Telephone Ltd., Okanagan Telephone Co., Ontario Northland Communications, Québec-Téléphone, Télébec Ltée, Téléphone du Nord de Québec Inc., Thunder Bay Telephone Department and Canadian National Telecommunications. In addition about 1,000 smaller telephone companies provide telephone services.

Canadian National Telecommunications, geographically the largest single system in Canada, provides telephone service for residents in the Yukon Territory and Northwest Ter-

ritories, parts of Newfoundland and in northern sections of British Columbia; in all, it has about 48,275 subscribers.

The TCTS members are continuing to automate their systems and rates for customer-dialled calls on the inter-company network have been steadily decreasing. Since 1972 TCTS has offered a one-minute minimum charge that allows more economical long distance calling.

Each member company is responsible for providing good quality service within its own territory and for integrating its facilities with those of all other telephone companies in Canada in order to provide connections with telephones elsewhere in North America and overseas. Collectively these companies operate the world's longest single microwave system carrying telephone conversations, radio and television programs and computer data from coast to coast.

Services have been developed to meet specialized needs across Canada for voice-only communications. These range from aids to the handicapped to services such as Wide area telephone service and Voicecom for business firms. Wide area telephone service (WATS), provided by the TCTS companies, is for customers who make or receive many long distance calls to or from many points. WATS allows a customer to call, or to receive calls from, anywhere within one of seven zones for a flat monthly rate. These areas range in size from part of a province to all of Canada.

Single digit dialling is the main feature of Voicecom service. It provides voice-only communications between specified locations via the public telephone network on a pay-as-you-use basis. By dialling a single telephone number, a Voicecom customer can reach as many as 10 telephones subscribing to the same service.

A Hot-Line service, introduced in 1969 by CNCP Telecommunications and Western Union in the US, enables companies in Toronto or Montreal to talk to their offices in New York City by simply picking up the handset of the telephone. When a customer picks up his handset, the exchange equipment will select the corresponding telephone at the other end. Subscribers are charged on a time-used basis.

Three microwave routes across Canada form the backbone of Canada's telecommunications systems. Two of the routes belong to TCTS, the third to CNCP Telecommunications. Numerous regional and local microwave routes feed into the main systems. Canada's first coast-to-coast microwave system, completed in 1958 by the Trans-Canada Telephone System, is still the longest single microwave route in the world, extending almost 4,000 miles.

Microwave transmission uses bands in the upper regions of the radio frequency spectrum. One microwave channel can carry up to 1,200 two-way telephone conversations, or one television program. Network radio and television programs of the CBC, the CTV, Quebec's Television Associates and Radio Quebec networks are carried by the TCTS microwave system.

The TCTS network consists of cable, microwave, satellite, and a variety of other transmission facilities. The system is growing constantly and is approaching the 10-million-mile mark within Canadian borders. Links are provided at many points into the United States, and overseas connections to and from the network are made through the Canadian Overseas Telecommunication Corporation. The TCTS companies have invested \$8.3 billion in their facilities and during 1974 expect to spend \$1.2 billion on new telecommunications facilities. Gross revenues for 1973 were about \$1.9 billion.

Canada's domestic communications satellite ANIK I has been integrated into the existing TCTS communications network. Bell Canada uses ANIK for communications with the Arctic, previously accomplished by a combination of tropospheric scatter and high-frequency radio, and TCTS uses ANIK for east-west communications.

In 1973 TCTS members continued to provide customers with the most technologically advanced telephone service available as they installed electronic switching stations in several Canadian centres. With computers controlling their operation, electronic switching stations can be expanded by enlarging the computer programs. The computer also makes it possible for one simple telephone to do the work of many more complex pieces of equipment. One particular type of electronic switching system, SP-1, was developed in Canada by Bell-Northern Research and is being manufactured for the domestic and export markets.

In Ottawa TCTS has established a sophisticated Service Co-ordination Centre to oversee network operations. The Centre monitors the TCTS network so that up-to-the-minute reports can be provided on the status of the total system. It also advises local managers about network conditions and provides technical direction. The Centre directs broadband restoration, the process of re-assigning microwave channels during emergencies, and establishes priorities for restoring service over the entire network.

16.1.1.2 Record communications

Public telegraph service. Canada's telegraph systems are operated by CNCP Telecommunications. This company, a fusion of the telecommunications branches of the Canadian National and Canadian Pacific railways, offers telegraph service in all provinces and in the Yukon Territory and Northwest Territories. Messages can be forwarded or received from any point in Canada or throughout the world via the overseas cable services. Messages are transmitted by cathode ray tube (CRT) teleprinter and facsimile equipment and telegraph networks over which the flow of public messages is controlled by computers. Messages are taken in and forwarded automatically in accordance with special programs stored in the computer's memory. The computer determines where the message is to be sent and sends it as soon as the circuits are free.

The most recent innovation is the use of cathode ray tube displays at all the larger message centres. Basically, CRT displays have television-like screens placed above a keyboard similar to a typewriter which is connected to the message-switching computer. As the operator receives a telephoned telegram message, she types it on the keyboard to read the message back to the caller and, with editing capabilities built into the displays, may make changes to the text if required. When the message is confirmed, the push of a button sends it into the message-switching computer for transmission to its destination.

Telex, the largest teletypewriter service in Canada, is also provided by CNCP Telecommunications. Its network of 29,500 subscribers in Canada interconnects with the Western Union and RCA Alaska Communications Telex networks in the United States and with European and world-wide networks of more than 500,000 subscribers in 177 countries. Telex is a direct distance dial teleprinter system which permits a subscriber to directly dial any other subscriber on the network. A multiple address service was offered to Telex users in 1971 through CNT's message-switching computer complex located in Toronto.

A medium-speed Telex service is offered exclusively by CNCP Telecommunications operating in the speed range of 100 to 250 words a minute. The subscriber may connect his own computer or data sending-receiving equipment or lease terminal equipment from CNCP. This service provides a direct dial interconnection with subscribers anywhere in Canada to achieve a medium-speed range transfer of data from one location to another. The toll rates to subscribers are the same for standard-speed and medium-speed Telex service and are based on time used and distance. A variety of speeds and codes can be handled, making this service useful for data transmission.

Telepost. CNCP and the Canada Post Office introduced a new communications service called Telepost on October 1, 1972 which fills a gap between telegrams and first-class mail. It is available to CNCP Telex and Telenet subscribers, and enables them to send messages electronically by Telex to a post office centre for delivery to the addressee.

Telex terminals have been installed in post offices across the country, where messages are placed in specially designed tri-colour envelopes and delivered through the normal mail stream. Next-day delivery is provided to virtually any postal address in Canada. There is no restriction on the length of the message. The charge is 75 cents for the service, in addition to regular Telex charges. A special delivery Telepost can be sent for an additional 40 cents.

Teletypewriter exchange service (TWX) is provided in Canada by TCTS companies. The service provides for switched, dial-up communication on a two-point or conference basis between teletypewriters at a speed of 100 words a minute or 10 characters a second. Both terminals can send and receive on the same connection, but not simultaneously. TWX basic service is a standard teletypewriter for use with relatively simple message transaction application. TWX premium service has all the basic features and in addition is designed for more complex order-writing systems requiring a heavy-usage terminal capable of handling forms, form tabulation and multi-copies. There are 4,600 TWX subscribers in Canada and almost 40,000 in the United States. TWX subscribers can connect with overseas teletypewriter customers through International Telex.

Private wire teletype systems. Although private wire services are still significant in the telecommunications industry, the prime communications users are supplanting their private wire systems with computer-controlled store-and-forward systems.

16.1.1.3 Data communications services

The availability of information of all kinds is vital to the management of a modern industrial country. The member companies of the Trans-Canada Telephone System and CNCP Telecommunications offer a wide selection of low-speed data services and a variety of medium- and high-speed computer communications facilities. In recent years the TCTS companies have increased the message capacity of their coast-to-coast microwave network to meet the growing needs of data communications users.

TCTS was the first Canadian carrier organization to develop digital communications facilities. This form of medium- and high-speed transmission is important to computer communications users because it permits the transmission of data in digital form, the language of computers. Without digital transmission facilities, data moving from one computer to another have to be converted to analogue form before they can be transmitted, and reconverted to digital form before the recipient computer can accept them. Another benefit of digital transmission is its low error rate.

TCTS established the Computer Communications Group (CCG) in recognition of the special requirements of Canadian data users. This multi-disciplinary task force develops advanced data communications systems and offers a wide variety of telecommunication services and products.

The Dataroute. In 1973 the CCG developed the world's first nation-wide digital data communications system — The Dataroute. It allows computer data to be transmitted at speeds up to 50,000 words a minute, with greater accuracy and at lower cost to data customers than the conventional analogue systems.

Faxcom. The Computer Communications Group also introduced Faxcom in 1973, a facsimile transmission service that transmits printed and graphic information by telephone. This service meets the growing need for the instant transfer of information and documents in their original format.

Vucom I is a terminal which displays data on a television-like screen. When it is connected to the telecommunications network, Vucom I can be used for retrieving information from central computer banks, for checking credit cards, etc. It can also be used as an in-house terminal for posting business orders and for process control in manufacturing. The terminal is equipped with a typewriter-style keyboard which the operator uses to prepare and send data.

Data-phone, a TCTS service, transmits data from punched cards, tape, or magnetic tape over public telephone circuits or leased private lines. The data-phones take signals in digital form and convert them to analogue signals (variable tones) for transmission. At the receiving end another data-phone converts the analogue signals back to digital so they are acceptable to a computer. Data-phone transmits at speeds up to 1,200 bits a second.

CNCP's Infodat service offers digital transmissions at speeds up to 50,000 words a minute. Infodat, which cuts transmission costs by an average of 25% and reduces errors to one in 10 million characters, was made possible through the expansion of CNCP's time division multiplexing techniques. Time division multiplexing is a method of allowing more data messages to travel on one circuit by making more effective use of the frequency spectrum. This reduces costs and provides for regenerated or reconstituted data signals so that the chance of errors is virtually eliminated. The service is available in major centres across the country. Canada's 28,500 Telex subscribers can also use Infodat channels.

Data-line service, offered by TCTS companies, uses the public telephone circuits wherever direct distance dialling is available. Data-line users can dial-up a time-sharing computer or other business machine and send or receive information at speeds up to 2,000 bits a second.

Datacom 300 permits the transmission of data over both the public switched network and private leased lines. As a speed-selectable, teletypewriter-compatible terminal, Datacom 300 operates at speeds ranging from 100 to 300 words a minute.

Dataspeed service is used to move large volumes of data at high speeds over the public telephone network or private lines. Transmitting at 1,050 words a minute, Dataspeed takes only half an hour to move the same amount of information that would keep a teletypewriter, operating at 100 words a minute, occupied for four and a half hours. Information to be transmitted is recorded on punched paper tape which then speeds through a machine that can

“read” the code represented by the arrangement of the punched holes. As the tape is read, signals are sent to the machine on the receiving end of the circuit.

Multicom is a wideband data service that allows the customer to pay only for transmission time used. It was introduced on a nation-wide basis in 1970. There are three classes of Multicom service and a subscriber can dial-up any other subscriber in Canada on the same class of service. With features designed specifically for data transmission, as opposed to voice transmission, Multicom provides reliability and low error rates.

Multicom I provides data and voice transmission between specified locations at speeds up to the capability of the public telephone network (2,000 bits a second). Users can connect with each other over the direct distance dial network.

Multicom II provides medium-speed data transmission up to 4,800 bits a second. It is functionally segregated from the direct distance dial network, but is integrated to the extent of using the same switching stations, microwave towers and other facilities. Provided the customer's business machines have the capability, data can be transmitted both ways simultaneously on Multicom II.

Multicom III provides transmission at speeds of 19.2, 40.8 and 50.0 kilobits a second over a network integrated with the regular telephone network but is, like Multicom II, functionally separate. Multicom III permits simultaneous voice and data transmission.

TCTS also provides wideband data channels that offer a special high-speed service to customers who need such transmission facilities on a full-time or dedicated basis. Unlike Multicom, wideband data channels are paid for on a 24-hour basis and operate outside the public telephone network.

Broadband exchange service. In 1967 CNCP Telecommunications introduced an automatic voice-data switching system known as broadband exchange service, a high-quality, rapid communications system. It is the first such system to operate in Canada and the second in the world. Broadband has more than tripled the transmission speeds for switched data services; furthermore, it has the capability, on customer demand, of transmitting computer data at 51,000 words a minute, or about 50 times faster than the top speed reached by conventional switched networks. The first organization to be tied into this modern network was the Royal Canadian Mounted Police, who use it for high-quality transmission of fingerprints, photographs and documents between headquarters at Ottawa and divisional headquarters at Montreal, Toronto, Winnipeg, Edmonton, Regina, Vancouver, Fredericton, Halifax and St. John's.

The name broadband exchange service is derived from the actual system since it is designed to permit various bandwidths, depending on the communications needs of subscribers. The system can switch four bandwidths: four and eight kilohertz for voice, facsimile and data (from 1,000 to 3,000 words a minute); 16 kHz for high fidelity radio program transmission and facsimile; and 48 kHz for high-speed computer-to-computer data exchange (51,000 words a minute) and high speed for facsimile. The four-kilohertz bandwidth is operational and the other bandwidths will become available upon customer demand. Transmission is carried by the CNCP microwave system using frequency diversity techniques to provide a high degree of reliability. In other words, the transmission is carried over different circuits at the same time, one being the back-up system for the other.

Each subscriber has in his office a voice-data subset which can be changed from voice to data communication. The subset features push-button “dialling” and the customer, to reach a distant point, simply keys a series of seven digits. The first three digits designate the distant exchange, the fourth digit indicates the desired bandwidth and the last three digits select the line of the desired party. A re-ring button is included so that the customer may signal the distant party to revert to voice communication during or after sending data. A feature of broadband is abbreviated keying, which allows customers to contact frequently called stations by pushing a two-digit code instead of the normal seven digits. Broadband will establish connections, including keying time, within five seconds, or two seconds on the special “hot-line” service. Actual connection time after keying or “dialling” is less than two seconds. Another feature of broadband is conference calling; a subscriber, by pushing a two-digit code, will automatically contact a pre-determined list of parties needed for the conference. Subscribers are charged on a “pay-as-you-use” basis.

Computer-controlled transmission systems. CNCP Telecommunications and the Trans-Canada Telephone System operate store-and-forward message-switching computers which control the flow of message traffic. CN's system provides a switching medium for Air Canada, CP Air, regional air lines and CN administrative message traffic, and also controls and transmits information on CN's reservation system. To make a reservation, a computer card is marked and inserted into a card reader and a reply returns via a teleprinter confirming the reservation. A third-generation computer installed for CN is performing major store-and-forward message switching functions for the Atmospheric Environment Service; when the computer finds a weather report from any of the 500 weather stations throughout Canada, it will tell the station equipment to transmit the report into the computer, which then determines where and at what time of the day the information is to be sent.

Commercial telegrams, entered on local CRT sets at most major offices, are forwarded by mini-computers to CN's third-generation message-switching computer complex for switching across the country.

Telenet. A time-shared, computer-directed data-and-message system called Telenet was introduced by CNCP Telecommunications in 1971. The Telenet system controls a number of subscriber networks by central computers. The message-switching computer centres handle many customers but each customer's network is completely private. In its initial phase Telenet will be confined to message-switching and related features such as speed and code conversions, message storage and retrieval, high-speed data handling, interface with customer-owned computers and message refile. A single message may be transmitted for delivery to as many as 32 stations by one group-routing indicator at one time. The computers recognize two levels of priority; messages marked "quick" are handled first. Message-switching computers are located at CN offices in Toronto and CP offices in Montreal and all Canadian subscribers' requirements are routed by one of these centres. Future plans call for switching-computer centres at Vancouver, Edmonton, Winnipeg and Halifax. Various options and capabilities of Telenet will enable CNCP to custom-design a system to meet specific needs of individual subscribers.

Message-switching data service. TCTS companies provide a message-switching data service (MSDS) which controls message traffic by computer between TWX terminals and private line terminals. TWX operates on a switched network at 100 words a minute and private line teletypewriters can operate at 60, 75 or 100 words a minute. In addition the TWX and private line teletypewriters may use different codes. Normally teletypewriters using different speeds and codes cannot communicate, but the MSDS computer makes this possible. The computer can also store messages destined for a teletypewriter that is busy at the time the message is sent. Later on the computer will check the recipient machine and will automatically forward the message when it is free. Developed in 1967, MSDS has relieved many large Canadian firms of the chore of manually sorting and forwarding inter-company teletypewriter messages.

Store-and-forward message switching dates back to the early 1940s when TCTS provided electro-mechanical devices which were installed on each customer's premises. The computer in today's switching system is located on telephone company premises, resulting in better maintenance. The computer not only operates faster than electro-mechanical switching, but also provides customers with additional features.

Software controlled communications service features a mini-computer that acts as a bridge between the communications networks and a customer's computer, allowing the latter to reach a wide variety of remote terminals using different speeds and codes. It can be re-programmed to cope with changing conditions, a function which previously could be performed only by physical modification of control units. The mini-computer can also direct traffic and diagnose trouble on the communications circuits.

16.1.1.4 Public and private commercial microwave facilities

Railways. CNCP Telecommunications operates a microwave system extending from Moncton, NB to Nanaimo, BC, which is used for television, telephone and data-relay purposes. During 1972, a connection was provided to Campbellton, NB, and the capability of handling telephone and data traffic was added along the Toronto—Hamilton—St. Catharines—Kitchener—London—Windsor route, previously used only for television purposes. Extensions to the microwave system have been completed on the Moncton—Halifax—Sydney and Kamloops—Kelowna—Penticton—Trail—Nelson routes.

On its own, CN has microwave facilities linking Newfoundland to the Maritime Provinces at Sydney, NS and across the Strait of Belle Isle to Labrador and to Quebec at Blanc Sablon. In addition, CN has installed a microwave system from Grande Prairie, Alta., through the Yukon Territory to Alaska to carry telephone and data traffic; it serves both civil and military organizations. In co-operation with Alberta Government Telephones, a combination microwave and tropospheric scatterwave system has been established to connect Alberta to Yellowknife, Fort Simpson and Lady Franklin Point in the Northwest Territories. A combination microwave-scatterwave system links the Yukon Territory with the Mackenzie delta area of the Northwest Territories. Microwave is used from Whitehorse to Keno and a tropospheric scatterwave system bridges the Richardson Mountains from Keno to Arctic Red River; from there, microwave is used north to Tuktoyaktuk. A scatterwave system hurls transmission up to the troposphere where it is bounced back to the next station some 200 miles away. A microwave system is being built by CN between Fort Simpson, Norman Wells and Inuvik.

The Quebec North Shore and Labrador Railway has developed a microwave system extending into northern Quebec to provide communication for mining operations and to serve some civil communication purposes. Ontario Northland Railway operates a microwave system connecting northern Ontario and James Bay for military and civil communication. The British Columbia Railway makes extensive use of 6,000 Mc/s microwave facilities linking Vancouver with Prince George, Dawson Creek and Fort Nelson, and the company is constructing a branch of this system linking Fort St. James to Dease Lake.

Satellite communications facilities. Telesat Canada, a commercial corporation, launched the world's first geostationary communications satellite designed for domestic commercial use, ANIK I, on November 9, 1972. It maintains a stationary orbit at an altitude of 22,300 miles, rotating with the earth every 24 hours and therefore constantly maintaining the same relative position over the equator.

Initial commercial service to Telesat's customers began during January 1973 through a network of 43 earth stations located across Canada. Basically, satellite communication is one long microwave link; transmission is comparable to that of existing microwave systems but with the added advantage of providing virtually all forms of telecommunications to areas which had not previously been well serviced.

ANIK I and its in-space back-up satellite, ANIK II, launched in 1973, provide television distribution in both English and French to many parts of Canada not previously served by terrestrial facilities, improve telephone communications in northern Canada and supplement existing microwave systems servicing southern Canada. The ANIK generation of satellites has a projected minimum life cycle of seven years. Telesat Canada has signed contracts with the Canadian Broadcasting Corporation for three radio frequency (RF) channels for English- and French-language television distribution; with a consortium of telecommunications common carriers, including the members of the Trans-Canada Telephone System and CNCP Telecommunications, for two RF channels to provide voice and data communications between Toronto and Vancouver; and with Bell Canada for two RF channels to provide improved telephone communications in northern Canada. During 1973, a contract was signed between Telesat Canada and the Canadian Overseas Telecommunication Corporation for service in 1974, linking the Canadian end of a new transatlantic cable, CANTAT II, via satellite to central Canada. The company is also negotiating with a number of US telecommunications carriers for the leasing of RF channels on ANIK II to provide US service via satellite until US systems are established in space.

Because of its early entry into the field of commercial satellite communications, Telesat Canada has acquired a marketable body of managerial and technical expertise in this rapidly evolving field.

16.1.2 Telephone and telegraph statistics

Telephone statistics. In 1972 Canada had 1,201 telephone systems compared to 1,490 in 1971; of these 1,170 filed returns with Statistics Canada compared to 1,171 in 1971 (Table 16.1). Although the number of co-operative systems declined slightly from 1,074 in 1971 to 1,072 in 1972, growth in the telephone industry was particularly evident in the larger telephone companies. The largest incorporated telephone company, Bell Canada, operates in Ontario, Quebec, Newfoundland and the Northwest Territories. In 1972 it owned and operated 6.7 million of the approximately 12.0 million telephones in Canada. The BC Telephone

Company, also owned by shareholders, operated 1.1 million of the total telephones in 1972.

Table 16.2 shows the distribution of telephones by province in 1972. Of the total 71% or 7.8 million were residential telephones and 3.2 million were business telephones. Ontario had the largest number of telephones with 55.1 per 100 population followed by British Columbia at 51.9 and Alberta at 51.7.

The major telephone systems record completed calls on representative days throughout the year and project this average over the year to arrive at an estimate of local conversations. This estimate is added to the actual count of long distance calls to arrive at the telephone calls placed with these telephone systems. Estimates of local calls are made for the smaller systems on the basis that these systems handle as many as their larger counterparts in the same area. These estimates are then added to the actual long distance calls made on the smaller systems. Table 16.3 shows that Canadians made an average of 835 calls a person in 1972. Telephone users in the US made 870 calls a person.

Table 16.4 shows the capitalization, revenue and expenditure of telephone companies together with the number of employees, salaries and wages paid for the years 1968-72. Provincial figures for 1972 are given in Table 16.5.

Telegraph statistics. Eight telegraph and cable companies operated in Canada during 1972. Domestic telegraph service is, however, provided mainly by the telecommunications departments of the two major railway companies. The number of telegrams continues to decline, giving way to other types of message transmission. The number of cablegrams has continued to increase. The business of telegraph and cable companies appears to be changing from direct handling of messages to the leasing of equipment for transmission of messages by others. Increasing revenues from the latter source of income are the main factor in the rise of total operating revenues (see Table 16.6). The total cost of property and equipment for all telegraph and cable companies was \$644.2 million in 1972, an increase from \$606.7 million in 1971. These figures do not include the investment in property and equipment by Telesat Canada, which in 1972 was reported at an undepreciated cost of \$36.7 million.

16.1.3 Federal regulations and services

The Department of Communications. The duties, powers and functions of the Minister of Communications include all matters relating to telecommunications over which the Parliament of Canada has jurisdiction, not by law assigned to any other department, branch or agency of the Government of Canada; and the development and utilization generally of communication undertakings, facilities, systems and services for Canada. He is responsible for the administration of the Telegraph Act (RSC 1970, c.T-3), the Radio Act (RSC 1970, c.R-1) and the Canadian Overseas Telecommunication Corporation Act.

The Department is organized into four functional areas (policy, planning, research and services) each under the direction of an assistant deputy minister. The policy sector is responsible for formulating and recommending international and national telecommunications policies and for proposing legislation for the government's consideration. This sector also co-ordinates federal-provincial relations and is the focal point for contacts between the Department and the Canadian Overseas Telecommunication Corporation, Telesat Canada, the Canadian Radio-Television Commission, and the Telecommunications Committee of the Canadian Transport Commission. The planning sector of the Department provides technological and socio-economic forecasts, identifies areas in which new research or development is required, and carries out strategic planning. It is made up of three directorates: Environmental Policy (including Long Range Planning and Economic Policy Planning), Educational Systems Technology, and Technological and Systems Planning. In the research sector the divisions and laboratories of the Communications Research Centre are used for research in the fields of telecommunications (both civil and military) and communications systems. The sector also includes a Research Policy and Programs Branch and an Industrial Research and Development Branch. Within the services sector, the Telecommunications Regulation Service establishes technical standards for broadcasting facilities and equipment, issues technical certificates and radio operating licences and manages the radio frequency spectrum. Another branch, the Government Telecommunications Agency, provides consulting and centralized telecommunications services for the government. The assistant deputy minister of services is the Department's principal adviser on organization, personnel, financial management, administration, bilingualism, information, legal letters and security.

Canadian Transport Commission. Telephone and telegraph companies incorporated under federal legislation are subject to the jurisdiction of the CTC in the matter of rates and practices under the provisions of the Railway Act. Previously the CTC regulated rates only in those cases in which a charge was made to the general public; recent amendments to the Railway Act extend its jurisdiction to cover rates charged for private wire services as well. International telegraph and telephone communications are handled subject to the International Telecommunication Convention and its Regulations, or under regional agreements, or both. Overseas cables landed in Canada are subject to the External Submarine Cables Regulations under the Telegraphs Act.

Radiocommunications in Canada, except for those matters covered by the Broadcasting Act, are regulated under the Radio Act and Regulations which, in addition to providing for the licensing of radio stations performing terrestrial radio services, also provide for licensing earth and space stations engaged in space radiocommunication services, and the Canada Shipping Act and Ship Station Radio Regulations. Radiocommunications in Canada are administered in accordance with the International Telecommunication Convention and Radio Regulations annexed thereto; the International Civil Aviation Convention; and the International Convention for the Safety of Life at Sea. A number of Canada—United States conventions and agreements are also in effect, such as: the Convention for the Promotion of Safety on the Great Lakes by means of Radio; the Convention relating to the operation, by citizens of either country, of certain radio equipment or stations in the other country; the Agreement relating to the Co-ordination and Use of Radio Frequency above Thirty Megacycles per Second; the Television and FM Agreements; and the Agreement relating to the operation in either country of radiotelephone stations licensed in the Citizens Radio Service of the United States and the General Radio Service of Canada. In addition, Canada is a party to the North American Regional Broadcasting Agreement.

The Canadian Radio-Television Commission issues broadcasting licences under the Broadcasting Act of 1968. However, licences are not issued unless the Minister of Communications certifies to the Commission that the applicant has satisfied the requirements of the Radio Act and Regulations, and has been or will be issued a technical construction and operating certificate under that Act. Broadcasting undertakings include radio (AM and FM) and television broadcasting stations, community antenna television (CATV) systems, and network operations. The technical rules and procedures for the allocation of frequency channels and installation and technical operation of broadcasting station facilities are set forth in the Department's *Broadcasting procedures and radio standards specifications*. These documents form the basis for determining the acceptability of applications for technical construction and operating certificates and for the control of the technical operation of broadcasting undertakings. The availability of the technical facilities for broadcasting is subject to the terms of the North American Regional Broadcasting Agreement, the Canada—US Television Agreement and the Canada—US FM Agreements.

Licensing and regulation of radiocommunications. Licensing is the federal government's method of maintaining control over radiocommunications in Canada. Under the Radio Act, radio stations (other than those used in broadcasting undertakings) employing any form of Hertzian wave transmission, including television and radar, must be licensed by the Department of Communications, unless exempted by regulation. The following general radio regulations provide for six classes of radio station licence: coast, land, mobile, ship, earth and space. Various categories of service may be authorized under each of these classes, e.g. public commercial service, private commercial service, amateur, experimental, etc. The number of radio station licences in force in the year ended March 31, 1973 was 296,620 compared with 268,810 for the previous year. These figures include stations operated by federal, provincial and municipal government departments and agencies, stations on ships and aircraft registered in Canada and stations in land vehicles operated for both public and private purposes, but they do not include stations in the broadcasting service. Licensing activities during the year ended March 31, 1973 with comparative figures for the previous year shown in parentheses, include: applications 46,694 (31,608), authorizations 44,641 (27,085), licence amendments 70,742 (26,139), cancellations 22,147 (18,711), total licences in force 296,620 (268,810), and net increase in licences 27,810 (12,483).

Radio standards in general are drawn up in consultation with the electronics industry, in-

interested organizations, associations and the general public, taking into account such technical factors as those which affect frequency spectrum utilization, reliability of apparatus, and compatibility under conditions of service. The Department of Communications maintains an engineering laboratory to develop standard specifications and to test apparatus to ensure compliance with the standards.

Licensing involves assigning specific frequencies to each station. Bands of frequencies are allocated for various types of services, often on a shared non-interference basis. Frequency selection, compatibility evaluation, domestic registration (computerized data base with a file size of more than 55 million characters), and notification with the International Frequency Registration Board (IFRB) of the International Telecommunications Union at Geneva are carried out to ensure efficient use of the spectrum. Assignments are made in keeping with international and domestic statutes and regulations, regional agreements and domestic policies. The IFRB is notified of frequency assignments for technical examination and for inclusion, with appropriate "in-service" dates, in the Master International Frequency Register so that Canadian assignments will receive international recognition and be given protection from interference by foreign stations. In-service dates are necessary when determining prior right to the use of particular frequencies.

The enforcement activities of the Department of Communications include the technical inspection of all radio stations including the monitoring and measurement of their radiated signals to ensure compliance with the regulations and conditions of licensing; the location and suppression of radio interference; the technical examination of candidates for the various classes of certificates of proficiency in radio which must be held by the operators of radio stations; and the direction of prosecutions in the courts. These functions are carried out through personnel located at five regional offices, 39 radio regulations inspection offices, 11 fixed monitoring stations (four of which have direction-finding facilities), eight mobile monitoring vehicles and 13 regional spectrum observation centres across Canada.

Radio aids to marine and aeronautical navigation. Federal services in aid of marine and aeronautical navigation are provided by the Ministry of Transport. Six regional offices, located at Vancouver, Edmonton, Winnipeg, Toronto, Montreal and Moncton, are responsible for the construction and operation of the facilities.

Radio aids to marine navigation are provided for radio-equipped Canadian vessels and foreign ships using Canadian waters. This safety and communications service for shipping covers the east and west coasts, the Great Lakes, the St. Lawrence River and Gulf, Hudson Bay and Hudson Strait and includes regularly broadcast weather reports, storm warnings and notices of danger to navigation. Ships at sea may obtain medical advice from any coast station. The stations carry out communications by radiotelegraph and/or radiotelephone and most of them provide connections to land telephone lines. Halifax and Vancouver stations provide long-range radiotelegraph and radiotelephone services to ships. Coast stations on Hudson Bay and Hudson Strait provide, in addition to their regular services, commercial communications for various prospecting and development organizations, make weather observations, handle administrative traffic and assist aircraft with information, landing conditions, etc.

Automatic radiobeacon stations are maintained on the east and west coasts, the St. Lawrence River and Gulf, the Great Lakes and Hudson Bay and Hudson Strait, giving navigational aid to mariners by transmitting signals on which bearings may be taken. There are five types of radiobeacons in operation: sequenced, continuously operating (marine and dual-purpose marine/air), marker, ship-calibrating and periodically operating. Sequenced radiobeacons are arranged, where possible, in groups up to a maximum of six stations transmitting in sequence on a common frequency, the sequence being repeated continually regardless of weather conditions. Continuously operating marine radiobeacons transmit a continuous carrier modulated by a tone which is keyed at fixed intervals to provide the identifying Morse characteristic. Continuously operating dual-purpose marine/air radiobeacons are provided for the use of both ships and aircraft. They transmit a continuous carrier modulated by a tone which is interrupted eight times a minute for the transmission of a one- or two-letter identifier. Marker radiobeacons, with a range of 10 nautical miles, do not have a characteristic Morse identifier, but can be identified only by the operating frequency. They operate continuously, transmitting half-second dashes for $13\frac{1}{2}$ seconds then remaining silent for one and a half seconds. Ship-calibrating radiobeacons are available at certain locations to enable ships fitted with direction

finders to calibrate their equipment. These radiobeacons operate for a six-hour period on the advertised frequency. Periodically operating radiobeacons are located in areas where there is a limited marine requirement. They normally transmit their characteristic signal continuously for one minute in every 10, using continuous carrier and tone-keyed modulation. This type of automatic radiobeacon is designed to operate unattended for long periods of time in areas that are isolated or inaccessible for part of the year.

Loran is a long-range radio aid to marine and air navigation providing accurate fixes at distances up to 750 miles by day and 1,500 miles by night. Two Loran stations operate in Nova Scotia, three in Newfoundland and two on the west coast. These stations, in conjunction with Loran stations of the United States Coast Guard, give service to ships and aircraft plying the North Atlantic and Pacific routes. Decca is a short-range radio aid to navigation providing accurate fixes at distances up to 250 miles. Four chains of Decca stations are in operation — the Newfoundland, the Nova Scotia, the Anticosti and the Cabot Strait — giving service to ships off Newfoundland and Nova Scotia and in the St. Lawrence River and Gulf.

It has become general practice to equip merchant ships with radar and important buoys are fitted with radar reflectors to increase their radar visibility. Ten radar responder beacons are in year-round operation on the east coast, two on the west coast, and five in the St. Lawrence River; nine in the western Arctic and five in the Great Lakes are in operation during the navigation season. Low-power transceivers are provided for use in emergencies at lighthouses, particularly at locations that would otherwise be completely cut off from assistance in case of illness.

Radio aids to air navigation are provided by the Ministry of Transport from coast to coast and from the United States border to the Arctic regions for use by Canadian aircraft and foreign air carriers flying over Canadian territory.

Low-frequency radio aids operating on the frequency band 200-415 kHz are generally located within a distance of 50 to 100 nautical miles of each other to form the low-frequency airways system. A few are located "off airways" in remote regions and a number of low-power radiobeacons serve major airports as terminal and landing aids. The Ministry of Transport operates 336 en route, low-frequency aids (11 of which are the older type radio range class) and 60 low-power terminal radiobeacons. These facilities are used primarily in association with airborne direction-finding equipment. Voice channels on a number of low-frequency aids are also used for aircraft communications and weather broadcast purposes.

Operating on the higher frequency bands VHF (very high frequency) and UHF (ultra high frequency), the Ministry of Transport operates 67 VHF omnidirectional ranges (VOR), 70 instrument landing systems (ILS) and 32 tactical air navigation systems (TACAN). At 30 locations the VOR and TACAN station are co-located and the complete station is called a VORTAC.

The VOR and VORTAC stations form the VHF airways system which closely parallels the older low-frequency airways system. Additional stations are being installed. Use of the VOR permits the pilot to select any desired course to fly to the station and, in the case of a VORTAC, additional information is provided which is a readout of the distance of the aircraft from the station.

Instrument landing systems provide radio signals which permit aircraft landings during periods of low visibility. Radio transmitters provide lateral and slope guidance to the approach end of the runway and also provide an indication of the distance to the runway threshold.

For air traffic control purposes, there are three main classes of radar in operation at Canadian airports consisting of 15 airport and airways surveillance radars with a range of 150 nautical miles, eight airport surveillance radars with a range of 50 nautical miles, and eight precision approach radars, which are short-range radars used for landing at major airports.

Radiotelephone communications are provided by 113 ground stations called Aeradio Stations, from which pilots may obtain weather data, air traffic control instructions and other information concerning flight safety. These stations operate for the most part on the VHF band but in the North and on international routes HF is used to provide the necessary long-range coverage. Thirteen of the 113 stations engage in international communications services for Canadian and foreign air carriers. All these ground stations are connected to a fixed teletype network of more than 48,000 circuit miles to meet aeronautical communications needs.

16.1.4 Overseas services

The Canadian Overseas Telecommunication Corporation was set up in 1950 as a Crown corporation to establish, maintain and operate Canada's external telecommunications services. It acquired existing overseas facilities which amounted to three telephone and 13 telegraph circuits provided by high-frequency radio and telegraph cable systems. COTC has built up a modern international telecommunications system providing Canadians with telephone, telegraph, telex, video and data transmission services to almost every country in the world through interconnections with global networks of submarine cables, high-frequency radio circuits and satellite circuits.

COTC has participated in the installation of six submarine cables. In 1956 the first long distance telephone and multi-purpose cable in the world was laid across the Atlantic by COTC (representing Canada), Britain and the United States. Next came the first links in the Commonwealth globe-circling system of submarine telephone cables: the transatlantic cable CANTAT in 1961 and the Pacific cable COMPAC in 1963. A microwave route leased from the Canadian domestic carriers connects the CANTAT and COMPAC systems. Although not involved in any of the terminal stations, COTC is a joint owner of the Commonwealth SEACOM cable to Southeast Asia. Another link in the Commonwealth network is the Canada—Bermuda cable.

In conjunction with the Great Northern Telegraph Company of Denmark, COTC installed the ICECAN cable linking Newfoundland with Greenland and Iceland. CANTAT II, a joint project of Canada and Britain, has been in service since April 1974. This 1,840-circuit telephone cable has a greater capacity than all existing transatlantic cables combined.

COTC is a member of the Commonwealth Telecommunications Organization (CTO) whose purpose is to promote the efficient exploitation and development of the Commonwealth external telecommunications system. The Corporation is an active participant in the Commonwealth Telecommunications Council which promotes the purpose of the CTO and carries out policies agreed to by governments.

In 1964 the International Telecommunications Satellite Organization (INTELSAT) was formed to operate a global commercial communications satellite system. COTC, as Canada's representative, was one of the initial 11 members of INTELSAT whose members now number 83, and continues to play an active role. The Corporation is also represented on the Board of Governors' Advisory Committees on finance, technical, contract, data and patent matters and the Special Committee on Long Range Planning. In addition to the services it provides via underseas cables, COTC supplies communication links to many countries of the world from its earth stations at Mill Village, NS and Lake Cowichan, BC via the two INTELSAT satellites over the Atlantic and one over the Pacific.

COTC participates actively as a representative member in the affairs of the International Telephone and Telegraph Consultative Committee (CCITT) and the International Consultative Committee on Radio (CCIR), two of the four permanent organs of the International Telecommunications Union, to promote international technical and operating standards and procedures. COTC is also associated with a number of national bodies such as the Canadian Telecommunications Carriers Association.

To keep pace with the expansion of overseas facilities from Canada, COTC has introduced sophisticated terminal equipment, automatic telephone switching centres, computer-controlled telegraph, telex and private wire (AUTOCOM) operations, and video and data transmission facilities.

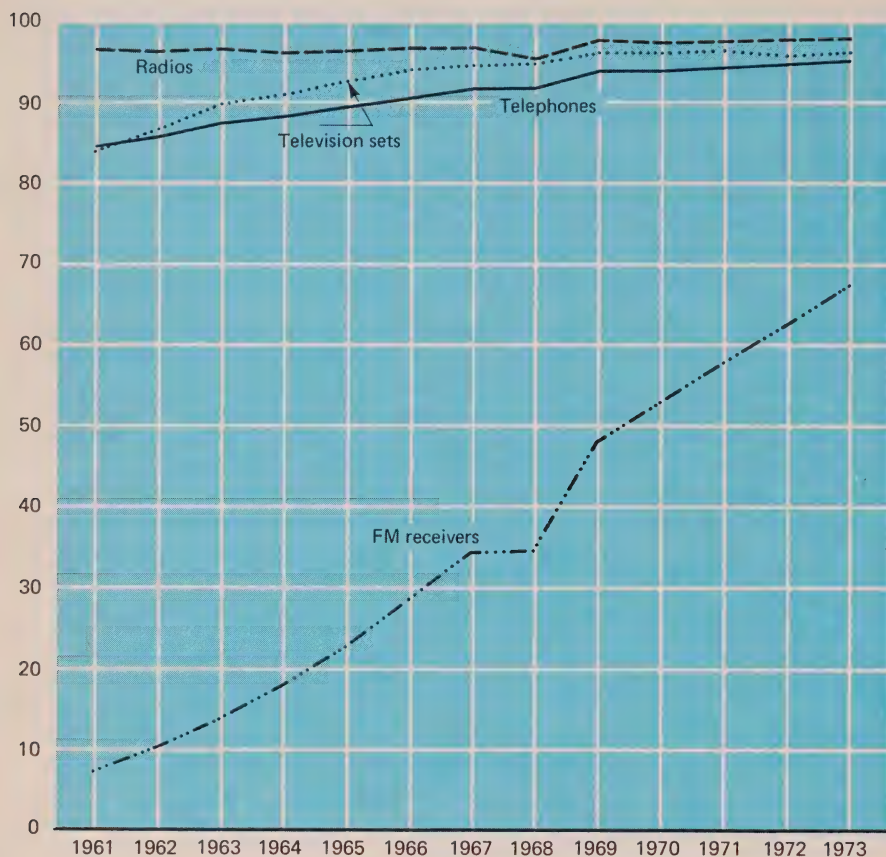
In the fiscal year 1972-73 Canadians made 1.8 million telephone calls and sent 1.5 million telex and 1.4 million telegraph messages to overseas points via COTC's facilities.

Under a long-term agreement with the Ministry of Transport, COTC charts the CCGS John Cabot, a combination ice-breaker/cable-repair ship to repair cables in the western North Atlantic Ocean.

16.2 Radio and television

The broadcasting system in Canada has both public and private components. The earliest legislation with respect to Canadian broadcasting was passed in May 1932, creating the Canadian Radio Broadcasting Commission, but the basic principles for radio and television broadcasting have been revised over the years. The Broadcasting Act of 1968 entrusted the Canadian Radio-Television Commission under Part II of the Act with the direction of the Canadian

Percentage of households with telephones, radios and television sets, 1961-73



broadcasting system. The Commission regulates and supervises all aspects of the broadcasting system except for technical matters relating to the planning and construction of broadcasting facilities, which are the responsibility of the Department of Communications.

The Canadian Broadcasting Corporation, a publicly owned corporation established by Act of Parliament (now Part III of the Broadcasting Act), provides the national broadcasting service in Canada. Its radio and television facilities extend from the Atlantic Ocean to the Pacific, and north to the Arctic Circle. The CBC, created in 1936 to replace the earlier public broadcasting agency that had operated since 1932, is financed mainly by public funds voted annually by Parliament, with supplementary revenue obtained from commercial advertising. The head office is in Ottawa and the main production centres are Toronto for the English networks and Montreal for the French networks. Regional centres operate across the country.

An applicant for a licence to establish and operate an AM, FM or TV broadcasting station, a community antenna television system (CATV) or a network files application forms with the Secretary of the CRTC. If found acceptable by the Commission, a public notice of the application is issued in the *Canada Gazette* and in one or more newspapers of general circulation within the area served or to be served by such station or system prior to the holding of a public hearing. The same procedure applies to an application for renewal or amendment of an existing licence.

16.2.1 Cable television

Basically, cable television is an antenna system linked to the individual subscriber's set by cable through a series of amplifiers, making it possible to bring in signals he could not otherwise obtain. Cable systems are capable of carrying AM and FM radio as well as VHF and UHF television signals. For this service, the subscriber customarily pays an installation fee and a monthly rental of about \$5. In 1972 there were 344 licensed cable television systems operating in Canada. The largest number, 131, was in Quebec with 108 in Ontario and 65 in British Columbia. These systems were operated by 268 cable television companies with 1,346,783 direct subscribers and 342,552 indirect subscribers.

Cable television is recognized as an integral part of the Canadian broadcasting system and policies and regulations that concern it must take into account the effects on other aspects of the national system. Cable television systems (CATV) are operated by private companies, each of which must be approved technically by the Department of Communications and licensed by the CRTC.

In July 1971 the CRTC announced its policy on cable television, emphasizing its mandate to provide the best possible service and widest choice from every source for the Canadian viewer. It is recognized that cable television provides an improved picture quality and extends the service area of companies dealing with broadcast transmissions. It has given viewers a greater variety of programs and has made possible a greater information flow. The policy established the composition of the basic services that cable television must provide, including CBC and other Canadian local and regional stations, a community channel and, where requested by provincial authorities, access for educational programming. The CRTC will authorize cable television systems to carry distant stations using microwave or other electronic communication systems which technically extend the receiving system. However, the number of channels carrying signals which are received by microwave from commercial stations not licensed by the Commission will generally be limited to three. The CRTC may limit the authorization to fewer of these signals if it considers that local television service would otherwise be jeopardized.

The capacity of cable television systems to import distant signals can fragment local audiences and can have an adverse effect on local broadcasting outlets. Cable systems take programs off-the-air from locally licensed television stations and distribute them in numerous other areas without contributing to the production cost of these programs. The CRTC has concluded that cable television systems should pay for the Canadian programs and services received over the air by buying additional Canadian programs from local and regional licensees as well as from network sources for play or replay on their systems, thus providing additional exposure for Canadian programs. A policy of program deletion and replacement, where identical programs are scheduled by stations already serving the community, will enable stations already licensed to serve an area to regain their portion of the local audience without reducing or restricting viewer choice. The CRTC also encourages a similar policy for commercial messages. Although cable licensees will not be permitted to sell advertising, they may remove the commercial content of signals not licensed to serve Canada and insert replacement commercial messages sold by Canadian television stations.

16.2.2 Television broadcasting

Television programming began in Canada in 1952 in Montreal and Toronto, and colour broadcasting in 1966. Of the estimated 6.3 million households in the country, approximately 6.0 million are equipped with one or more television sets. An estimated 33.2% of Canadian households had colour television sets in 1973 with highest colour ownership in Alberta at approximately 40%, and lowest in Newfoundland at 15%. Two of the four Canadian television networks are operated by the CBC, one in English and one in French. The other networks are the English-language network of the CTV Television Network Limited which extends across Canada, and the French-language network TVA, at present serving only Quebec. In addition, the CRTC has licensed a third Canadian television network, Global Communications Limited, which began operations on January 1, 1974. Initially, this network will cover Ontario.

As at December 31, 1972 Canada had 100 originating television stations, and 418 rebroadcasting stations. The CBC owned and operated 19 English- and 10 French-language originating stations, as well as 108 English and 28 French rebroadcasting stations. There were 36 privately owned English-language affiliates of the CBC, with 152 rebroadcasting stations,

and seven French-language affiliates operating another 27 rebroadcasting stations. The CTV television network operated 16 originating stations across Canada, with a total of 97 rebroadcasting stations. The TVA network had three originating stations. In addition, there were nine independent originating stations in the English language, operating six rebroadcasting stations.

From the start, the development of Canadian television was complicated by geographical and language factors. About half the people of Canada live near the southern border and have access to programs broadcast by one or all of the major US networks. This fact and the need to maintain a Canadian identity and to articulate Canadian interests contributed to the rapid development of Canadian television services. Toronto and Montreal now rank among the world's principal television production centres in the English and French languages; Vancouver, Edmonton, Winnipeg, Ottawa, Quebec City, Halifax, Moncton and St. John's are the regional production centres. The Canadian communications satellite ANIK I, and its back-up satellite ANIK II launched in 1973, play an increasingly significant role in the efforts to bring radio and television services to the more remote parts of the country, particularly in the Canadian north.

16.2.3 Radio broadcasting

Despite the impact of television, radio remains an important means of communication for Canada's population. The CBC networks provide a wide variety of programming on a national basis and private local stations attract a large percentage of the listening audience. About 97% of the households in Canada are equipped with radio. In about half of them there is more than one set, and often there is a radio in the car and one or more portable transistor sets. It is estimated that there is one radio for every two persons.

To serve this audience, the CBC operates an English-language network and a French-language network, and there are a considerable number of privately owned radio stations, some affiliated with the CBC networks and some serving an entirely local function. Of the 345 AM stations in operation in 1972, 38 were owned by the CBC and 307 were privately owned. The English network consisted of 29 CBC owned and operated stations and 69 private affiliates; the French network was made up of nine CBC stations and 38 private affiliates. There is also a second French-language network consisting of five private radio stations. The 200 unaffiliated private stations offered a basically local community service. Of the 87 FM stations, 10 were operated by the CBC and 77 were privately operated. The private stations are financed entirely from advertising revenue.

In addition to a coast-to-coast English network and a French network that reaches a large proportion of the country's French-language population in eight of the 10 provinces, the CBC provides regional and local services. Its networks extend over more than 28,000 miles. It has its own news service and offers a wide variety of programs in information, public affairs and entertainment. It also provides three special services — the International Service, the Northern Service, and the Armed Forces Service.

16.2.4 Canadian Broadcasting Corporation

Programming. The program schedules of the CBC are varied, with both light and serious material for a wide range of public tastes. They include news and commentary, documentaries, discussion and interview, music, drama, comedy, science, religion, agriculture, school and youth programming, community services and special events, sports, consumer affairs, arts and letters. CBC enterprises derived from program material include selected program texts in book form, audio tapes of radio talks and documentaries, recordings of Canadian music and poetry and, in the French service particularly, a variety of books, records and games for young children.

Canadian content in the 1973 English and French television schedules exceeded 70%, well above the 60% required by CRTC regulations. The Corporation is the country's largest employer of Canadian talent, with a payroll in excess of \$25 million. In June the CBC received a special award from the American Federation of Musicians of the United States and Canada "in recognition of the Corporation's continuous utilization of fine music and its appreciation of the artists who perform it." The CBC's production of *The sleeping beauty* performed by the National Ballet of Canada was seen on both English and French TV networks and on National Educational Television in the United States where it won an Emmy Award as the season's out-

standing single program in the classical music field. The major part of the CBC's television programming on both networks was in colour.

A special CBC unit, the Olympics Radio and Television Organization (ORTO), has been set up to prepare for the 1976 Montreal Summer Olympics. CBC will act as the host broadcaster, providing coverage and facilities for an expected 4,000 broadcasters from 100 countries.

Facilities and coverage. In 1973 the total length of CBC radio networks was 30,605 miles, and of CBC television networks 12,724 miles. About 98.7% of Canadians can receive CBC radio and 97.4% CBC television, but there are still about 300 remote communities of 500 population or more where residents do not yet have a service in their own language or in some cases have no service at all. An accelerated coverage program to reach these areas is being developed in consultation with the Department of the Secretary of State, Treasury Board, the Department of Communications and the Canadian Radio-Television Commission.

During 1973 live network television replaced taped and delayed programming for about 20 communities in the Far North. Service was delivered by way of ANIK, Telesat Canada's domestic communications satellite. Gradually increased use of the satellite will also make it possible to extend CBC French services across the country, to improve certain aspects of radio distribution, and to increase regional participation in network programming, especially in the area of news and current events. There were continuing experiments in the use of CBC radio and television transmitters by community groups. Projects were conducted at Espanola, Ont. and Rankin Inlet, NWT in radio, and at La Ronge, Sask. in television to determine the feasibility and adaptability of local programs produced by citizens' groups. Maison de Radio-Canada, the new Montreal headquarters for the CBC's French networks, was officially opened in December 1973. Construction is proceeding on a new regional centre in Vancouver to consolidate facilities by 1975.

Special services. Radio Canada International (RCI), the shortwave service of the CBC, broadcasts in 11 languages to Eastern and Western Europe, Africa, Latin America, the South Pacific, the Caribbean and the United States. In January 1973 a transcription program *Only one earth* produced by the English Section received an award from Radio Sweden for offering the best coverage of the Stockholm Conference on the Human Environment. Radio Canada International also distributes Canadian music and spoken-word recordings to broadcasters in other countries.

The CBC continued its active participation in international organizations such as the *Communauté des télévisions francophones*, the European Broadcasting Union, the Commonwealth Broadcasting Conference and the Asian Broadcasting Union. CBC programs were sold or exchanged in France, Belgium, Switzerland, Japan, Italy, Denmark, England, Ireland, Finland and the Netherlands. In radio, 13 CBC *Stage* productions were sold to National Public Radio in the United States. At the request of the Canadian International Development Agency, UNESCO and other agencies, the CBC arranged training programs for broadcasters and journalists from Upper Volta, Mali, Senegal, Ivory Coast, France, Ghana, Tanzania, Malaysia, Kenya and Montserrat. CBC personnel were seconded as experts and instructors to India and Malaysia.

CBC Northern Service radio includes medium and shortwave broadcasts, with programs in Eskimo and Indian languages as well as in English and French. Northern radio stations also carry and contribute to the CBC's national programming. The advent of live television service via the ANIK satellite to the North has reduced, and will eventually eliminate, the need for taped program packages.

Finances. Total operating expenses, including \$9.8 million interest on loans to finance the acquisition of capital assets, totalled \$263.0 million in 1972-73, an increase of 10.9% or \$25.8 million over 1971-72. These expenses do not include the principal instalment of \$8.2 million paid on capital loans.

Gross advertising revenue of \$52.9 million showed an increase of \$3.5 million or 7.1% from the previous year. Revenue from the television service was \$50.1 million and from the radio service, \$2.8 million. Combined, these revenues equalled 21.3% of the Corporation's expenses, excluding depreciation and amortization, as compared to 21.9% in 1971-72.

The funds required for the net cost of operations, amounting to \$201.9 million, including repayment of principal instalment on loans, but excluding depreciation and amortization, were

provided for in a parliamentary payment of \$207.0 million and the use of prior years' non-lapsing parliamentary vote carry-over to the extent of \$4.6 million. The Corporation drew only \$205 million of the \$207 million voted in accordance with a request made by Treasury Board. The carry-over of \$4.6 million was not required and \$3.1 million of the parliamentary payment of \$205 million was not spent.

16.2.5 Statistics of the broadcasting industry

Statistics on radio and television broadcasting are obtained by Statistics Canada in co-operation with the Canadian Radio-Television Commission. In 1972, 343 private radio stations and 56 television stations reported. Operating revenue of the broadcasting industry for the year amounted to \$316.2 million, an increase of 13.9% over 1971. Of the total, radio accounted for \$147.8 million or 46.8% and television for \$168.4 million or 53.2%; in 1971 radio received \$127.7 million or 46.0% and television \$150.0 million or 54.0%. Revenue from national and network time sales represented 56.7% of the total broadcasting revenue and revenue from local time sales, 43.3%; national and network time sales increased by 9.9%, local time sales by 20.9% and other incidental operating revenue increased by 3.9% from 1971. Operating expenses in 1972 at \$422.6 million were 8.1% higher than in 1971. However, total operating revenue, plus the net cost of operating the CBC, which is financed from its parliamentary grant, exceeded these expenses, resulting in a net profit after depreciation and interest charges of \$51.5 million for 1972 compared to \$39.5 million in 1971.

In 1972 there were 20,124 employees engaged in the broadcasting industry, an increase of 335 or 1.7% over 1971. Salaries and wages paid by the industry totalled \$206.4 million, an increase of \$16.9 million or 8.9% over 1971. Fringe benefits, including such expenses as staff pensions and hospitalization insurance, totalled \$13.4 million, a rise of 6.1% from 1971. After adjustment on account of other income and expenses and income taxes, the final net profit of the private sector of the broadcasting industry in 1972 was \$27.9 million compared with \$20.7 million (revised) in 1971.

Statistics of the cable television industry. Table 16.7 presents financial statistics of the Canadian cable television industry. This industry, comprising 344 operating systems, reported an increase of 23.9% in total operating revenue for the year ended August 31, 1972, rising to \$82.5 million from \$66.6 million for the previous year. Subscription revenue from individual subscribers and multi-outlet contracts accounted for \$77.2 million. Operating expenses before deducting interest and depreciation charges rose from \$35.2 million to \$42.5 million in 1972, resulting in net revenue of \$40.0 million compared with \$31.4 million in the previous year. After deducting interest, depreciation and provision for income taxes, the industry achieved a net profit to August 31, 1972 of \$9.2 million compared with \$6.6 million earned in the previous year.

16.3 Postal service

The basic function of the Canadian Postal Service is to receive, convey and deliver postal matter with speed and security. To do this, it maintains thousands of post offices and uses air, rail, road and water transportation facilities. Associated functions include: sales of stamps and other articles of postage, registration of letters and other mail for dispatch, insuring parcels, accounting for COD articles and transaction of money-order business. Because of its transcontinental facilities, the Post Office assists other government departments with such tasks as selling hunting permits, collecting government annuity payments, distributing income tax forms and Public Service employment application forms, and displaying government posters.

Post offices are established wherever the population warrants. In rural areas and small urban centres they transact all the functions of a city office. In larger urban areas, postal stations have functions similar to the main post office, including general delivery service, lock-box delivery and letter-carrier delivery. Canada's larger post offices are complex semi-automated plants with conveyors and chutes, parcel and bag sorting machines, wrapomatic parcel sealing machines, photo-electric counters, intercom systems and observation gallery telephone systems. Outside the post office building there are mail-mobiles, automatic stamp-vending machines and curbside mail boxes.

The operating service of the Post Office Department is organized into four regions, each headed by a general manager reporting directly to the Deputy Postmaster General. The regions

are divided into districts, each headed by a district director. The operating and support functions required to provide postal service to the public are the responsibility of local postmasters who receive technical and administrative assistance from district and regional offices at strategic points.

Postal service is provided throughout Canada. The country's airmail system utilizes most transcontinental flights, supported by many branch and connecting lines, and links up with United States domestic and other international airmail systems. First-class domestic mail is carried by air between Canadian points whenever this expedites delivery. Air stage routes provide an all-class mail service to many northern areas which can be served only by air. There are over 46,000 miles of airmail and air stage routes.

The Assured Mail Program, guaranteeing next-delivery-day service of first-class letters if mailed early in the day, launched in Toronto in 1971, was extended to all major Canadian cities in 1972. By late 1973 the country was completely coded with postal coding machines operating in the main Ottawa postal station. By March 31, 1975, coding machinery will be in operation in six other Canadian centres, Winnipeg, Regina, Saskatoon, Calgary, Edmonton and Toronto.

At March 31, 1973 there were 8,684 post offices in operation; letter-carrier delivery was being provided in 254 urban areas and 5,093 private contractors were delivering mail to 826,732 rural and suburban households. In 1973, 504 city mail services transported mail between post offices and postal stations, collected mail from street letter boxes and delivered parcel post, and 439 side services transported mail between post offices and railway stations, wharves and airports. Intercity transportation of mail by truck was conducted by 659 major services, complemented by 846 feeder or stage services operating to and from smaller centres. Although many of the highway services have replaced rail for the transportation of mail, rail remained the principal mode for long distance movements of other than first-class matter.

Revenue and expenditure of the Post Office Department for the year ended March 31, 1973 were \$563.1 million and \$654 million, respectively; gross revenue receipts are received mainly from postage, either in the form of postage stamps and stamped stationery, postage meter and postage register machine impressions, or in cash. During the year 41.4 million money orders were issued having a value of \$1,034 million, of which \$1,001.2 million was payable in Canada and \$32.9 million in other countries. The value of money orders issued in other countries and payable in Canada was \$8.9 million.

16.4 The press

Daily newspapers published in Canada in 1973 numbered 114, counting morning and evening editions separately. Combined circulation was about 4.8 million — 83% in English and 17% in French (Table 16.8). Publishers' surveys show that each newspaper is read by an average of three persons.

Daily newspaper advertising revenue in 1972 was \$374.5 million and circulation revenue was \$120.3 million. By comparison, advertising revenue of 343 private radio stations in Canada in 1972 was \$142.3 million and of 56 private television stations \$120.7 million. In 1973, there were 15 daily newspapers with a circulation in excess of 100,000, accounting for 57% of total circulation. There were 13 dailies published in the French language, 11 of them located in Quebec. Although the circulation of daily newspapers blankets the more populous areas well beyond publishing points, smaller cities and towns and rural areas are also served by 825 weekly newspapers catering to local interests and exercising important local influence. The Canadian society is also enriched by 90 foreign-language daily or weekly newspapers published in 27 languages, often sprinkled with English.

About 37% of Canada's daily newspapers are privately owned or independent. There are three major newspaper chains in the country, owned by Southam Press Ltd. (13 dailies), Thomson Newspapers Ltd. (34 dailies) and FP Publications Ltd. (nine dailies). Both Southam and Thomson Newspapers are publicly owned companies with shares traded on Canadian stock exchanges. Papers in the Thomson chain are concentrated in the smaller cities. Southam accounts for about 20% of total daily circulation, Thomson for 10% and FP for about 22%.

In addition to their own news-gathering staffs and facilities, Canadian newspapers subscribe to a number of syndicated agencies and wire services, the largest being The Canadian Press which is a co-operative agency owned and operated by Canadian dailies. Largely by teletype and wirephoto transmission, it provides its 110 member newspapers with world and

Canadian news and also serves radio and television stations. CP has its own news-gathering staff and each member newspaper provides the agency with important local news for transmission to fellow members and members share the cost in ratio to their circulations.

CP carries world news from Reuters (the British agency), from The Associated Press (the United States co-operative) and from Agence France-Presse (of France) and these agencies receive CP news on a reciprocal basis. CP maintains a French-language service in Quebec.

United Press International of Canada, the second major news wire service in Canada, is a private company and a part of United Press International World Service. It provides Canadian and international news and pictures to newspapers and TV and radio stations across Canada and is an outlet for Canadian news through United Press International facilities throughout the world. Certain foreign newspapers maintain bureaus in Ottawa and elsewhere in Canada to collect and interpret Canadian news.

Press statistics. Table 16.8 gives numbers and circulations of reporting English-, French- and foreign-language newspapers, by province, for 1971 and 1972, estimated from *Canadian Advertising*. Circulation figures are given for daily English- and French-language newspapers only. Such circulation figures are relatively easy to obtain because, in their own interest, newspapers qualify for and subscribe to the Audit Bureau of Circulation. For these, ABC "net paid" figures have been used; "controlled" (free) distribution newspapers are not included. On the other hand, circulation data for foreign-language newspapers, weekly newspapers, weekend newspapers and magazines are incomplete and therefore not usable.

Table 16.9 presents statistics on numbers and circulations of newspapers published in 1972 and 1973 in centres with populations over 30,000. Foreign-language publications numbered 116 in 1972 and 118 in 1973 (Table 16.10). In 1973 (1972 figures are in parentheses) 19 (16) were in Italian, 17 (20) in Ukrainian, 10 (10) in German, seven (eight) in Hungarian, seven (seven) in Dutch and six (seven) in Portuguese.

Sources

- 16.1 - 16.1.1 Canadian Telecommunications Carriers Association.
- 16.1.2 Transportation and Communications Division, Industry Statistics Branch, Statistics Canada.
- 16.1.3 Information Services, Department of Communications.
- 16.1.4 Canadian Overseas Telecommunication Corporation.
- 16.2 - 16.2.3 Information Services, Canadian Radio-Television Commission.
- 16.2.4 Audience Services, Canadian Broadcasting Corporation.
- 16.2.5 Transportation and Communications Division, Industry Statistics Branch, Statistics Canada.
- 16.3 Public Affairs Branch, Post Office Department.
- 16.4 The Canadian Press; Canadian Daily Newspaper Publishers Association; United Press International of Canada Ltd.

Tables

..	not available	e	estimate
...	not appropriate or not applicable	p	preliminary
—	nil or zero	r	revised
--	too small to be expressed	certain tables may not add due to rounding	

16.1 Pole-line and wire mileage and number of telephones in use, 1968-72

Year	Systems reporting	Route mileage	Length of wire miles	Telephones in use			Per 100 population
				Business	Residential	Total	
1968	1,772	298,000	48,110,000	2,557,059	6,260,787	8,817,846	42.1
1969	1,618	297,000	53,138,000	2,719,317	6,576,731	9,296,048	43.7
1970	1,376	297,727	56,230,618	2,853,601	6,896,410	9,750,011	45.2
1971	1,171	298,235	59,199,244	2,996,276	7,272,505	10,268,781	47.3
1972	1,170	303,000	62,996,211	3,183,076	7,804,065	10,987,141	50.0

16.2 Telephones in use, by province, 1972

Province or territory	Telephones						
	On private lines		On party lines		Extensions		Coin telephones
	Business	Residential	Business	Residential	Business	Residential	Business
Newfoundland	14,131	69,663	1,393	27,504	10,986	16,385	1,318
Prince Edward Island	3,675	14,477	348	10,247	2,766	4,061	260
Nova Scotia	27,871	150,756	1,552	45,266	21,019	44,807	3,439
New Brunswick	20,440	107,804	1,070	42,804	21,418	37,129	1,956
Quebec	227,553	1,353,928	7,901	290,974	204,033	398,916	24,591
Ontario	33,702	1,860,679	9,875	468,227	283,208	755,078	29,737
Manitoba	41,454	234,315	2,857	54,920	30,582	55,641	3,350
Saskatchewan	33,947	187,738	3,037	62,052	22,631	48,387	3,065
Alberta	74,156	407,796	2,621	63,262	63,869	130,378	6,635
British Columbia	103,401	410,195	2,965	265,195	75,299	174,865	7,640
Yukon Territory	1,456	1,292	156	2,462	940	525	90
Northwest Territories	2,210	4,090	163	1,350	1,344	798	165
Canada	883,996	4,802,733	33,938	1,334,263	738,095	1,666,970	82,246
	Private branch exchanges		WATS ¹	Centrex	Mobile	Total	Telephones per 100 population
	Business	Residential	Business	Business	Business		
Newfoundland	15,283	—	—	497	184	157,344	29.3
Prince Edward Island	3,018	—	—	—	—	38,852	34.1
Nova Scotia	26,954	—	—	5,785	66	327,515	40.8
New Brunswick	21,575	—	133	4,154	2,357	260,840	40.2
Quebec	298,658	12	940	91,133	1,053	2,899,692	47.8
Ontario	448,202	66	1,947	156,699	1,376	4,348,796	55.1
Manitoba	54,764	9	136	3,832	74	481,934	48.5
Saskatchewan	36,169	12	18	—	326	397,382	43.7
Alberta	105,132	—	59	5,806	4,743	864,457	51.7
British Columbia	136,229	—	249	10,566	3,274	1,189,878	51.9
Yukon Territory	1,479	—	—	188	53	8,641	43.2
Northwest Territories	1,231	—	—	270	189	11,810	31.9
Canada	1,148,694	99	3,482	278,930	13,695	10,987,141	50.0

¹On wide area telephone service lines.

16.3 Local and long-distance calls, calls per capita and average calls per telephone, 1968-72

Year	Local calls '000	Long-distance calls '000	Total calls '000	Calls per capita	Average calls per telephone		
					Local	Long-distance	Total
1968	13,993,601	388,007	14,381,608	687	1,587	44.0	1,631
1969	14,596,659	434,292	15,030,951	707	1,570	47.0	1,617
1970	15,436,847	458,397	15,895,244	737	1,583	47.0	1,630
1971	16,439,365	495,454	16,934,819	779	1,601	48.0	1,649
1972	17,776,963	571,944	18,348,907	835	1,618	52.0	1,670

16.4 Financial statistics of telephone systems, 1968-72

Year	Capital stock ¹ \$ '000	Long-term debt \$ '000	Cost of plant \$ '000	Revenue \$ '000	Expenditure \$ '000	Full-time employees	Salaries and wages ² \$ '000
1968	1,657,588	2,089,386	5,467,326	1,268,387	1,095,763	66,699	436,543
1969	1,702,556	2,233,048	5,988,211	1,404,325	1,227,420	66,578	479,068
1970	1,827,746	2,522,040	6,571,028	1,568,726	1,366,645	68,334	540,674
1971	2,005,304	2,861,144	7,255,226	1,725,302	1,504,854	69,995	600,949
1972	2,067,681	3,065,290	7,960,368	1,924,840	1,673,433	72,671	681,187

¹Includes premium on capital stock.²Full-time and part-time.**16.5 Financial statistics of telephone systems, by province, 1972**

Province or territory	Capital stock ¹ \$ '000	Cost of plant \$ '000	Revenue \$ '000	Expenditure \$ '000	Full-time employees	Salaries and wages ² \$ '000
Newfoundland	31,284	79,578	23,068	19,373	1,033	7,221
Prince Edward Island	6,760	22,739	5,506	4,704	255	1,606
Nova Scotia	64,623	227,655	55,984	47,833	2,917	21,062
New Brunswick	57,055	202,458	50,158	42,623	2,246	18,017
Quebec	1,563,709 ³	4,925,069 ³	1,215,101 ³	1,043,028 ³	18,123	178,577
Ontario	49,411	104,676	28,671	20,307	23,027	221,389
Manitoba	80	346,790	71,216	69,237	3,979	34,111
Saskatchewan	49,266	304,279	64,899	50,366	2,615	20,530
Alberta	1,219	791,110	172,133	163,030	7,779	75,042
British Columbia	244,274	956,014	238,104	212,932	10,681	103,346
Northwest Territories	—	—	—	—	16	286
Total	2,067,681	7,960,368	1,924,840	1,673,433	72,671	681,187

¹Includes premium on capital stock.²Full-time and part-time.³Includes data of Bell Canada which operates in Newfoundland, Quebec, Ontario and the Northwest Territories.**16.6 Summary statistics of Canadian telegraphs, 1968-72**

Year	Operating revenues \$ '000	Operating expenses \$ '000	Net operating revenue \$ '000	Pole-line mileage	Wire mileage	Em- ployees ¹	Telegrams '000	Cable- grams ² '000	Money transfers \$ '000
1968	116,666	86,426	30,240	49,497	573,276	8,687	9,673	4,057	45,163
1969	126,568	92,770	33,798	49,294	563,229	7,860	7,618	4,235	41,654
1970	136,948	100,068	36,880	49,813	553,644	7,678	6,906	4,729	57,867
1971	146,413	107,567	38,846	42,328	739,836	7,553	5,888	5,347	40,833
1972	163,190	115,308	47,882	40,267	761,545	7,323	5,052	6,457	49,594

¹Excludes commission operators.²Includes wireless messages and transatlantic Telex messages.**16.7 Financial statistics of the cable television industry, years ended Aug. 31, 1971 and 1972 (dollars)**

Item	1971	1972
OPERATING REVENUE		
Sales revenue		
Subscription revenue	62,791,051	77,223,617
Installation (or move) revenue	3,056,594	4,288,885
Other sales revenue	143,699	13,593
Incidental operating revenue	628,788	938,128
Total	66,620,132	82,464,223
EXPENSES		
Salaries, wages and fringe benefits	14,273,025	17,146,095
Program origination	503,743	1,172,641
Technical service		
Lease payments: head-end and distribution system	3,385,723	3,963,334
Repairs and maintenance to property, plant and equipment	2,760,945	1,708,023
Vehicle expenses (including lease payments)	1,253,072	1,438,532
Miscellaneous technical and service expenses	1,491,675	3,744,066
Advertising, sales and promotion	1,812,119	2,476,935
Administration and general		
Professional services (legal, accounting and consulting)	1,327,124	975,056
Office supplies and expenses	1,875,406	2,358,400
Miscellaneous administrative and general expenses	4,673,381	4,762,231
Other expenses not classified above	1,839,885	2,764,956
Total	35,196,098	42,510,269
Net operating revenue before depreciation, interest and other adjustments		
Depreciation	31,424,034	39,953,954
Interest	13,458,866	16,999,810
Other adjustments, addition to (deduction from) income	4,587,957	6,472,595
Net profit before income taxes	(205,326)	340,726
Provision for income taxes	13,171,885	16,822,275
Net profit after income taxes	6,613,801	7,602,819
	6,558,084	9,219,456

16.8 Estimated numbers and circulations of reporting English-language, French-language and foreign-language newspapers, by province, 1972 and 1973

Province or territory	1972				1973			
	Daily	Circulation ¹	Weekly ²	Weekend ³	Daily	Circulation ¹	Weekly ⁴	Weekend
English-language newspapers								
Newfoundland	3	42,881	8	1	3	45,457	9	1
Prince Edward Island	3	30,044	—	—	3	30,880	1	—
Nova Scotia	6	158,955	28	—	6	165,133	28	—
New Brunswick	5	110,140	13	—	5	112,862	14	—
Quebec	3	332,361	16	1	3	324,791	16	1
Ontario	47	1,957,238	238	—	47	1,995,648	249	—
Manitoba	7	235,826	58	—	8	239,696	57	—
Saskatchewan	4	135,437	93	—	4	127,217	88	—
Alberta	7	351,131	102	—	7	342,270	118	—
British Columbia	16	525,956	97	—	17	559,017	104	—
Yukon Territory and Northwest Territories	—	—	3	—	—	—	5	—
Total	101	3,879,969	656	2	103	3,942,971	689	2
French-language newspapers								
Nova Scotia	—	—	1	—	—	—	1	—
New Brunswick	1	7,861	3	—	1	9,476	4	—
Quebec	10	810,618	150	15	11	807,609	135	15
Ontario	1	37,786	5	—	1	43,505	4	—
Manitoba	—	—	1	—	—	—	2	—
Saskatchewan	—	—	6	—	—	—	5	—
Alberta	—	—	2	—	—	—	1	—
British Columbia	—	—	1	—	—	—	1	—
Total	12	856,265	169⁵	15	13	860,590	153⁴	15
Foreign-language newspapers⁶								
Quebec	—	—	14	—	—	—	13	—
Ontario	3	..	49	—	3	..	53	—
Manitoba	—	—	10	—	—	—	10	—
Alberta	—	—	1	—	—	—	1	—
British Columbia	3	..	7	—	2	..	8	—
Total	6	..	81	—	5	..	85	—

¹Circulation not reported for all newspapers.

²Includes semi-weeklies, tri-weeklies and bi-weeklies.

³Includes 58 bilinguals — New Brunswick 2, Quebec 49, Ontario 3 and Saskatchewan 4.

⁴Includes 53 bilinguals — New Brunswick 3, Quebec 45, Ontario 1, Manitoba 1 and Saskatchewan 3.

⁵All daily and weekly foreign-language publications given here are considered to be newspapers.

16.9 Estimated numbers and circulations of reporting English-language and French-language¹ newspapers published in incorporated centres of over 30,000 population, 1972 and 1973

Incorporated centre	Households (Census 1971) <i>No.</i>	1972		1973		Weekly <i>No.</i>
		Daily <i>No.</i>	Circulation	Daily <i>No.</i>	Circulation	
English-language newspapers						
Belleville, Ont.	10,636	1	17,252	1	17,433	1
Brampton, Ont.	11,273	1	7,180	1	8,374	1
Brandon, Man.	9,471	1	12,722	—	13,955	—
Brantford, Ont.	19,447	1	26,341	—	28,063	—
Burlington, Ont.	23,803	—	—	2	—	1
Cambridge, Ont. ²	—	—	—	—	13,680	—
Calgary, Alta.	121,290	2	143,043	1	145,971	4
Chatham, Ont.	10,549	1	15,348	—	14,854	—
Cornwall, Ont.	13,022	1	14,607	1	14,639	—
Dartmouth, NS	17,119	—	—	1	—	1
East Kildonan, Man.	8,674	—	—	2	—	2
Edmonton, Alta.	131,209	1	162,620	2	148,733	2
Galt, Ont.	11,266	1	14,100	—	—	—
Granby, Que.	9,569	—	—	1	—	1
Guelph, Ont.	17,570	1	17,890	—	18,094	—
Halifax, NS	34,324	2	113,007	2	117,422	3
Hamilton, Ont.	94,617	1	128,152	1	134,749	2
Kingston, Ont.	18,570	1	31,876	—	33,520	—
Kitchener, Ont.	33,522	1	56,556	—	59,871	—
Lethbridge, Alta.	12,561	1	22,408	—	22,240	1
London, Ont.	69,213	2	123,547	—	126,797	—
Markham, Ont.	9,562	—	—	1	—	1
Mississauga, Ont.	41,655	—	—	3	—	3
Moncton, NB	13,252	2	35,419	—	36,694	—
Montreal, Que.	394,727	2	325,278	2 ^a	318,444	3 ^a
Moose Jaw, Sask.	9,984	1	8,889	—	8,774	—
New Westminster, BC	15,464	1	30,896	1	31,644	—
Niagara Falls, Ont.	19,460	1	18,621	—	19,053	—
North Bay, Ont.	13,079	1	20,289	—	21,809	—
North Vancouver, BC	11,519	—	—	2	—	3
Oakville, Ont.	16,711	1	8,518	1	9,213	1
Oshawa, Ont.	26,486	1	25,149	—	23,535	—
Ottawa, Ont.	93,594	2	175,549	1	171,770	—
Peterborough, Ont.	17,368	1	25,937	1	26,069	1

16.9 Estimated numbers and circulations of reporting English-language and French-language¹ newspapers published in incorporated centres of over 30,000 population, 1972 and 1973 (concluded)

Incorporated centre	Households (Census 1971) No.	1972		1973		Weekly No.
		Daily	Weekly	Daily	Weekly	
		No.	Circulation	No.	Circulation	
English-language newspapers (concluded)						
Pierrefonds, Que.	8,005	—	—	1	—	1
Prince George, BC	8,633	1	15,150	—	16,603	—
Quebec, Que.	54,369	—	—	1	—	1
Regina, Sask.	42,255	1	68,125	—	66,063	—
Richmond Hill, Ont.	8,680	—	—	1	—	1
St. Catharines, Ont.	32,876	1	36,893	—	38,142	—
St-Jean, Que.	8,725	—	—	1	—	—
St. John's, Nfld.	20,427	2	34,256	1 ⁴	36,985	1 ⁴
St. Vital, Man.	10,039	—	—	—	—	—
Saint John, NB	24,102	2	56,439	—	57,808	—
Sarnia, Ont.	17,000	1	19,218	1	19,693	1
Saskatoon, Sask.	38,639	1	50,075	1	44,009	1
Sault Ste Marie, Ont.	20,921	1	22,071	—	23,045	—
Sherbrooke, Que.	22,755	1	7,083	—	6,347	—
Sudbury, Ont.	24,457	1	39,056	—	40,294	1
Sydney, NS	8,110	1	27,258	1	28,608	1
Thunder Bay, Ont.	31,269	2	32,551	—	32,744	—
Toronto, Ont.	224,698	4	853,119	3	870,891	7
Vancouver, BC	153,417	2	344,673	2	359,271	6
Victoria, BC	24,852	2	71,638	1	74,233	1
Waterloo, Ont.	10,836	—	—	1	—	—
Welland, Ont.	12,804	1	19,889	—	19,500	—
Windsor, Ont.	59,798	1	84,098	—	85,249	—
Winnipeg, Man.	84,117	2	212,064	3	213,027	2
French-language ¹ newspapers						
Charlesbourg, Que.	8,373	—	—	1	—	1
Chicoutimi, Que.	8,002	—	—	2	25,000	2
Cornwall, Ont.	13,022	—	—	1	—	1
Drummondville, Que.	8,833	—	—	1	—	1
Edmonton, Alta.	131,209	—	—	1	—	1
Granby, Que.	9,569	1	11,445	2	10,976	—
Hull, Que.	17,526	—	—	1	—	1
Lachine, Que.	13,680	—	—	2	—	1
LaSalle, Que.	21,699	—	—	1	—	1
Laval, Que.	56,669	—	—	2	—	3
Longueuil, Que.	26,581	—	—	2	—	2
Moncton, NB	13,252	1	7,861	—	9,476	—
Montreal, Que.	394,727	4	512,996	27 ⁵	491,883	29 ⁵
Montreal N., Que.	23,765	—	—	2	—	1
Ottawa, Ont.	93,594	1	37,786	—	43,505	—
Pierrefonds, Que.	8,005	—	—	—	—	1
Quebec, Que.	54,369	3	197,321	3 ³	186,625	1
St. Boniface, Man.	13,369	—	—	1	—	2
Ste-Foy, Que.	18,524	—	—	2	—	—
St-Jean, Que.	8,725	—	—	2	—	2
St-Laurent, Que.	19,464	—	—	1	—	1
Sherbrooke, Que.	22,755	1	39,649	—	43,272	1
Sudbury, Ont.	24,457	—	—	1	—	1
Toronto, Ont.	224,698	—	—	—	—	1
Trois-Rivières, Que.	15,577	1	49,207	1	49,853	—
Valleyfield (Salaberry-de-), Que.	8,299	—	—	3	—	1
Vancouver, BC	153,417	—	—	1	—	1
Verdun, Que.	24,103	—	—	1	—	1

¹Includes bilingual weeklies.
²Incorporated Jan. 1, 1973.
³Includes one weekend newspaper.
⁴Weekend newspaper.
⁵Includes 14 weekend newspapers.

16.10 Estimated numbers of foreign-language publications, 1972 and 1973

Language	1972	1973
Arabic	1	2
Byelorussian	1	1
Chinese	5	4
Croat	3	2
Czech	2	2
Danish	1	1
Dutch	7	7
Estonian	2	2
Finnish	2	2
German	10	10
Greek	6	6
Hungarian	8	7
Icelandic	1	1
Italian	16	19
Japanese	2	2
Latvian	1	1

16.10 Estimated numbers of foreign-language publications, 1972 and 1973 (concluded)

Language	1972	1973
Lithuanian	3	3
Norwegian	1	1
Pakistani	—	1
Philipino	—	1
Polish	3	4
Portuguese	7	6
Scandinavian languages	—	1
Serbian	3	3
Slovak	2	2
Slovenian	1	1
Spanish	2	3
Swedish	2	2
Ukrainian	20	17
Yiddish	4	4
Total	116	118

Sources

16.1 - 16.7 Transportation and Communications Division, Industry Statistics Branch, Statistics Canada.
16.8 - 16.10 Information Division, Marketing Services, Statistics Canada.

Chapter 17

Manufacturing

17.1 Manufacturing industries

Statistics on the manufacturing industries are issued by Statistics Canada on an annual, monthly and quarterly basis, depending on the type of data. The annual Census of Manufactures provides the basic annual data. Among the monthly figures available, two important types of information lend themselves to projecting figures of the annual Census of Manufactures: the survey of manufacturers' shipments, inventories and orders, and surveys of employment and related information.

The monthly shipments, inventories and orders series is published by manufacturing industry for Canada and the provinces, with breakdowns by industry group and by selected industry in the case of the totals for Canada. The data are derived from a survey of respondents to the annual census and are projections of the census total, subject to the qualification that only significant new entries into the manufacturing industries since the latest census are added. The most comprehensive figures resulting from monthly surveys of employment have been estimates of the total number of employees in the manufacturing industries of Canada and the provinces, classified into durable and non-durable goods industries. Both the monthly shipments survey and monthly estimates of employment are based partly on statistical sampling. Both sets of monthly figures also yield totals for the calendar year; while the annual census includes some reports made on a respondent's fiscal year differing from the calendar year, the effect of this is not large.

The data obtained relate to establishments — roughly corresponding to the popular conception of a plant, factory or mill — and, for certain statistics, to non-manufacturing units known as “head offices, sales offices and auxiliary units”. For some purposes companies rather than plants or factories are of interest. For example, a company owning factories, mines and merchandising outlets will normally report its profit for the whole company rather than divide it among the different industrial activities in which it is engaged. Thus, the quarterly survey of corporation profits provides figures on sales, profits and certain other statistics for whole companies classified to industries on the basis of their principal activities (for instance, factories might be included in mining or mines in the manufacturing industry). Such figures are generally not comparable with establishment statistics.

Various other monthly and quarterly surveys relate to commodities rather than to establishments or companies. That is, they account for production or shipments of particular products without regard to the industry in which they are produced.

In addition to providing estimates of over-all employment in manufacturing (and other industries), monthly surveying of employment, hours and payrolls results in indexes of employment for larger establishments by industry and by province and sub-provincial area, and in data on average hours and earnings. Monthly indexes of industrial production provide measures of the physical volume of output of the manufacturing industries. That is, they measure output, net of the effects of price changes. These indexes afford annual averages which can be used to indicate movement in the real domestic product at factor cost originating in the manufacturing industries. In addition, many users find valuable information in the large number of monthly industry selling price indexes for various manufacturing industries.

17.1.1 Post-census data

Only preliminary data based on monthly or quarterly surveys are available for 1972 and 1973 as the results of the 1972 Census of Manufactures are still being processed. Some factors influencing the levels of current and annual census figures in comparison with each other are mentioned in the preceding text.

Table 17.1 compares the value of shipments of goods of own manufacture, by province, for 1972 and 1973 (from a monthly survey) with data for 1971 and earlier censuses, and Table 17.2 makes similar comparisons for industry groups. Table 17.3 gives company data on profitability in various industry groups for the years 1971-73. Because these latter figures relate to companies and those derived from the Census of Manufactures relate to establishments (roughly speaking, plants), the two series are of limited comparability.

17.1.2 Census of Manufactures

Results of the Census of Manufactures are published industry by industry as they become available. The Census of 1971 is the latest for which all industries have been issued. Summary statistics are given in Tables 17.4 - 17.8. Introduction of the 1970 revision of the Standard Industrial Classification (SIC) substantially affects comparability of data for some industries compiled on the new basis with data for 1969 and earlier years. All data presented here for 1970 and later years are based on the 1970 revision of the SIC except those in Table 17.3 dealing with company profits.

Central Canada accounted for about four out of every five dollars of all value added by manufacture in the manufacturing industries of Canada in both 1970 and 1971; Ontario's contribution in 1971 was 53.3% and Quebec's 27.9%. British Columbia was in third place, accounting for some 8.6% of value added by manufacture. Alberta, Saskatchewan and Manitoba combined were almost as large a contributor, accounting for 6.9%. The Atlantic Provinces accounted for 3.3%.

An interesting measure of the intensity of manufacturing activity by region is in terms of value added per capita of their population. The 1971 Canada average was \$1,008; Quebec and British Columbia were both close to this average with \$1,004 and \$853, respectively, but Ontario's average was much higher at \$1,505. The average for the Prairie Provinces was \$423 and that for the Atlantic Provinces, \$350.

17.1.3 Size of manufacturing establishments

The average size of a manufacturing establishment, in terms of numbers of persons employed, is somewhat over 50 persons but more than one half of the total work force in the manufacturing industries is in establishments employing 200 or more persons. While almost one third of the manufacturing establishments in Canada have fewer than five persons employed, including working owners, these establishments, because of their small average size, account for only about one in 73 persons of the working force of the manufacturing industries (Tables 17.9 - 17.10).

The average size of a manufacturing establishment in terms of shipments of goods of own manufacture was \$1.6 million in 1971 (Table 17.11). However, this average size is greatly affected by the large number of very small establishments which in fact account for only a minor share of over-all shipments. Establishments with \$1 million or more shipments of goods of own manufacture in 1971 accounted for about one establishment in five in the manufacturing industries, but they reported 89.6% of the total value of shipments of goods of own manufacture (Tables 17.12 - 17.13).

17.1.4 Exports of manufactured goods

Export statistics are not broken down into manufactured goods and other goods but the categories "fabricated materials" and "end products" give some indication of the degree of manufacture of such exports and the total for the two can be used as a substitute for manufactured exports. Because exports are not necessarily made by the manufacturer and because of valuation problems, the resulting series are not wholly comparable with Census of Manufactures data on manufacturer's shipments of goods of own manufacture. In the latter, for instance, work by smelters owned by mining companies is valued at an imputed charge to the mine, not at the value of the metal produced. Table 17.14 shows recent trends in exports of manufactures.

An important reason for the rising level of exports in the end products category has been the Canada-United States Agreement on Automotive Products, which went into effect in 1965.

17.2 Canadian and foreign control of Canada's manufacturing industries

Figures on Canadian and foreign control of Canada's manufacturing industries have been published for many years using data for whole companies or groups of companies. These statistics have played an important part in influencing policy and have the advantage of relating nationality of control to such key variables as profits or assets, which are reported only on a "company" basis. They have had a slight disadvantage in that they were not directly comparable with the annual Census of Manufacturers which shows employment, shipments of own manufacture and various other items for establishments and ancillary units broken down by

more than 170 industries. In company-based data, the whole company is classified to an industry, although that industry may form only part of its total activity. The Census of Manufactures distributes the individual units of a multi-plant firm among as many industries as applicable; financial data for a company necessarily put all its activity from all its plants into one industry, sometimes with the inclusion of data on non-manufacturing establishments. Large integrated complexes involving primary production such as mining as well as manufacturing must sometimes be classified entirely within or outside manufacturing as a sector, with a consequent distortion of data on one side or the other.

Data on Canadian and foreign ownership using company data are issued annually in *Corporations and Labour Unions Returns Act — Part I — Corporations*, Statistics Canada Catalogue No. 61-210. Similar data based on enterprises or groupings of commonly controlled companies, arising from the compilation of balance of payments statistics, are published in *Canada's international investment position*, Statistics Canada Catalogue No. 67-202. For the latest available figures on an enterprise basis see Chapter 21, Section 21.5.2.

The value of looking at Canadian or foreign control of the manufacturing industries on an establishment rather than a company basis was recognized in a special study of ownership of establishments of the 1961 Census of Manufactures. A more recent study of the nationality of control of manufacturing establishments, based on the 1970 Census of Manufactures, is now available (*Domestic and foreign control of manufacturing establishments in Canada, 1969 and 1970*, Statistics Canada Catalogue No. 31-401). "Establishments" are roughly equivalent to plants, factories or mills; ancillary units are head offices, sales offices or the like associated with manufacturing establishments.

In 1970 foreign-controlled companies accounted for 51.9% of the value of shipments of goods of own manufacture reported in the annual Census of Manufactures. Their contribution to value added by total activity was slightly higher, 52.3%, but they employed only 44.2% of the total employees covered by the Census.

Although foreign-controlled companies own only 11.9% of establishments, the average size of establishment is considerably larger than in the Canadian-controlled group. Canadians owned seven out of eight plants, on the average, in the manufacturing industries as a whole, reflecting the importance of Canadian ownership in small manufacturing plants. US-controlled companies accounted for 42.4% of the total value added and 35.6% of the total number of employees. A summary is presented by industry group and for all manufacturing industries in Table 17.15. Table 17.16 shows percentages of foreign control in the 40 leading industries of Canada, ranked by value added.

Most of the 25 industries with the highest percentages of foreign control of total value added are industries which afford less ample opportunity to Canadian investors because they require large capital investments, intensive advertising to sell consumer goods or use international technology. An additional disadvantage to Canadians may be the fact that several of these industries are concentrated in the hands of very few firms.

As the Statistics Act prevents the publication of any data which could lead to disclosure of figures about individual companies, percentages of foreign control may be published only for manufacturers in the following 20 of the 25 industries (the percentage of total value added by companies controlled abroad is shown in parentheses): fibre and filament yarn (100%); batteries (99.2%); office and store machinery (98.2%); automobile fabric accessories (97.8%); refractories (97.4%); abrasives (96.2%); pigments and dry colours (93.7%); toilet preparations (91.7%); inorganic industrial chemicals n.e.s. (91.5%); lubricating oils and greases (91.4%); plastics and synthetic resins (87.7%); motor vehicle parts and accessories (87.3%); smelting and refining (87.3%); pens and pencils (90.5%); clocks and watches (89.6%); electrical industrial equipment (89.4%); soaps and cleaning compounds (88.8%); instrument and related products (87.7%); aluminum rolling, casting and extruding (87.1%); and pharmaceuticals and medicines (86.6%).

The five industries for which percentages are confidential are petroleum refining, the railroad rolling stock industry, motor vehicle manufacturing, tire and tube manufacturing and miscellaneous electrical products manufacturing, n.e.s.

Industry groups. In industry groups for which ownership percentages may be published, the highest degree of foreign control (96.4%) is found in the petroleum and coal products industries. Considering total value added, the highest degree of Canadian control is found in the

clothing industries, where Canadian firms account for 89.3% of the over-all output. These sharply contrasting figures partly reflect the nature of the industries. The petroleum and coal products industries are characterized by large plants and widespread ownership of refineries by primary producers of petroleum, an activity offering special reasons for large-scale international operations. At the retail level, the importance of advertising and marketing methods may give large international enterprises the advantage. The clothing industries, by comparison, are characterized by small plants and ease of entry by local capital.

Following is an analysis of ownership in 20 industry groups and some factors accounting for the degree of Canadian or foreign control. The percentage of foreign control of total value added is in parentheses.

In the food and beverage industries (39.9%) the 18 industries show wide variation in Canadian and foreign control. Poultry processors have the lowest foreign control (11.6%) for any non-confidential industry; confectionery manufacturers have the highest (80.2%). Half the food and beverage industries have about 70% or more Canadian control. The importance of small plants and relatively simple processing for local or various non-consumer markets contributes to high Canadian control. The confectionery industry is an example of consumer-oriented marketing favouring foreign control; manufacturers spent 4.8% of the value of manufacturing shipments on advertising in 1967. Canadian participation in the tobacco industries is too limited to give data on the Canadian/foreign breakdown. The importance of consumer advertising and the advantages accruing to large international companies in terms of advertising techniques and "spill-over" of US advertising to the Canadian public favour high foreign ownership; the accumulated goodwill of established brands is in effect a barrier to entry by Canadian capital.

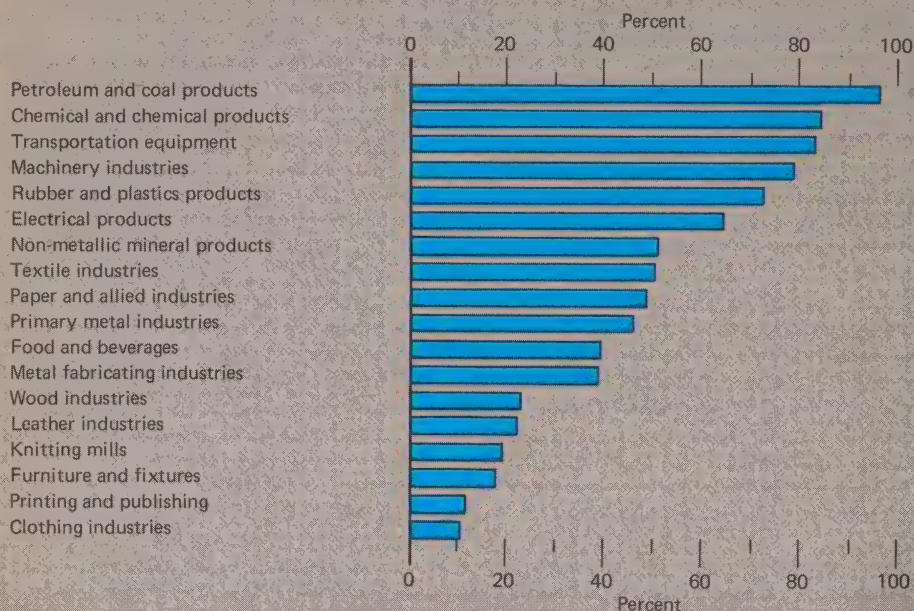
In the rubber and plastics products group the high degree of foreign ownership (72.9%) in all the rubber industries except footwear can be explained by the importance of tire sales to US car makers and the role of advertising in the consumer replacement market. However, in the plastics fabricating industry, *n.e.s.*, one of Canada's most rapidly expanding industries, foreign control is 49.6%, based on ownership of 17.8% of the establishments. In the leather industries foreign ownership accounts for only 22.3% of the total value added. Leather glove factories are completely Canadian owned at least partly because the practicality of small plants enables local entrepreneurs to compete. The boot and shoe findings industry has the highest percentage of foreign control (33.6%) in the group.

In the textile industries group (50.3%), Canadian and foreign control each range from zero to 100%. Both the cotton yarn and cloth industry, in which large plants are advantageous, and embroidery, pleating and hemstitching manufacturing with local entrepreneurs operating small plants are entirely Canadian owned. At the other end of the scale, the fibre and filament yarn industry, in which technology and patents play a major role, is the only entirely foreign-controlled manufacturing industry. In cotton yarn and cloth mills, foreign firms tend to expand their share of the market through imports rather than take-overs or branch plants. In the knitting mill industry foreign control equals only 19.8% of total value added. "Other" knitting mills show the least foreign control (16.0%), knitted fabric manufacturers the most (23.3%); this is an industry in which capital costs have been within the reach of local entrepreneurs seeking to enter it.

In the clothing industries group (10.7%), half of the 10 industries show less than 2.6% foreign control. The foundation garment industry has the highest percentage of foreign control of value added (55.1%). Marketing, brand names and consumer advertising are important factors; US advertising has an "overflow" effect on the Canadian market, tending to support sales by US subsidiaries in Canada. The other clothing industry in which foreign control is significant is fabric glove manufacturing (48.1%). In the clothing industries as a whole, small plant size and ease of entry encourage local entrepreneurs.

Of the wood industries group (23.0%), veneer and plywood mills have the highest percentage of foreign ownership (39.5%). In spite of continuing growth of plant size in the sawmills and planing mills industry and the fact that the industry produces processed natural resources for the export market, it is not highly concentrated and Canadian firms play a leading role. Foreign firms control only 5.6% of the establishments and 27.7% of the total value added. Half of the 12 industries have less than 15% foreign control. Most industries in the furniture industries group (18.1%) have limited foreign control. The exception is the office furniture manufacturing industry (51.9%) in which the need for large plants as well as specialized design

Foreign-controlled share of value added in selected industry groups, 1970 Census of Manufactures



and marketing gives some advantage to US companies. Most of the paper and allied industries (49.2%) report a relatively high degree of foreign control. Pulp and paper mills, the most important industry in the group and Canada's largest industry in 1970 in terms of value added, is 47.8% foreign controlled. Among the industries for which data can be published, the miscellaneous paper converter industry reported the largest percentage of foreign control (63.1%). Branch plants produce international brand names of paper products which are supported by intensive consumer advertising.

The printing and publishing group (11.6%) has the second highest degree of Canadian control of total value added and the highest Canadian control in terms of number of employees. The nature of the markets and the fact that technological advances, though important, are developed chiefly by foreign suppliers of equipment, favours Canadian control. Foreign control of total value added ranges from 2.6% in publishing and printing to 34.4% in the "publishing only" industry. The latter industry consists of publishers who do not operate their own printing plants; the foreign ownership is attributable largely to US owned consumer magazines with Canadian editions and to book publishers.

In the primary metal industries (46.6%) iron and steel mills are only 14.5% foreign controlled, but smelting and refining has the industry group's largest foreign control, 87.3%. It represents a classic case of foreign capital from countries needing industrial materials seeking opportunities in countries able to supply the raw materials; iron and steel mills, on the other hand, largely serve Canadian industry and Canadian enterprises dominate. Half of the industries in the metal fabricating group (39.1%) are 46% or less foreign owned. Foreign control varies from a negligible 2.6% in machine shops to 57.5% in boiler and plate works, where the engineering background necessary for larger projects and the integration of international operations have encouraged large branch plants.

In the machinery industries (79.2%) engineering knowledge and the advantages of large-scale international operations have aided foreign companies in establishing and expanding in Canada. Some sell product lines which are partly made in Canada and partly imported. Foreign

control ranges from 43.9% in the agricultural implement industry to 98.2% in office and store machinery manufacturing, which includes computers.

The extremely high percentage of foreign control in the transportation equipment industries (83.0%) is influenced by motor vehicle manufacturers (confidential percentage), motor vehicle parts and accessories manufacturers (87.3%) and aircraft and parts manufacturers (85.4%). However, foreign control drops as low as 18.8% in boat building and repair, an industry which is characterized by small Canadian enterprises. Subsidiaries and branch plants of US owned motor vehicle manufacturers make an important contribution to foreign control of motor vehicle parts and accessories manufacturing.

In the electrical products industries (64.5%) foreign control percentages for some industries are confidential but in general the proportion of foreign ownership is high. The lowest published figure is 47.9% in communications equipment manufacturing, a highly technological industry with an important market in the defence industry. Battery manufacturing is almost completely foreign controlled (99.2%); sales to motor vehicle manufacturers and brand name promotion to consumers are significant factors.

Half of the 14 industries in the non-metallic mineral products group (51.2%) report less than 31% foreign control; many of the industries sell construction materials from relatively small factories to local or regional markets. Among the industries for which data may be published, foreign control ranges from 17.1% in clay products manufacturing (from domestic clays), a group including brick makers, to 97.4% in refractories manufacturers.

The petroleum and coal products industries have the highest degree of foreign control of the 20 groups (96.4%) because of international oil companies operating in the petroleum refining industry. The industry percentages within the group are confidential except for manufacturers of lubricating oils and greases (91.4%). The industry group with the second highest proportion of foreign control is chemical products (84.3%). These industries depend on international technology and patents and are highly concentrated. Among the industries for which data may be published, foreign control ranges upward from 66.1% of value added in the printing ink industry to 93.7% of pigment and colour manufacturing.

Among the industries grouped together as miscellaneous manufacturing industries there is a wide range of variation in Canadian and foreign control. Fur dressing and dyeing is entirely Canadian controlled, whereas pen and pencil manufacturers are 90.5% foreign controlled. Of 21 industries, the toys and games industry has the median or middle value for foreign control, 52.9% of total value added.

17.3 Government assistance to manufacturing

17.3.1 Federal assistance

The Department of Industry, Trade and Commerce is responsible for stimulating the establishment, growth and efficiency of the manufacturing, processing and tourist industries in Canada, and also for developing export trade and external trade policies. It assists Canadian industries to initiate and take advantage of technological advances, improve products and services, increase productivity and expand domestic and foreign markets through a wide variety of programs and services. At each phase of the product cycle — from research, development and design through production and marketing — the Department can assist with information and financial assistance.

Program for the Advancement of Industrial Technology (PAIT). The objective of PAIT is to promote the growth and efficiency of industry in Canada by providing financial assistance for selected projects concerned with the development of new or improved products and processes incorporating advanced technology, which offer good prospects for commercial exploitation in domestic and international markets. The program, initiated in 1965, was revised in 1970 to provide cash grants in lieu of loans, and has been expanded to include assistance for some specific activities outside the development phase.

Financial assistance, normally 50% of the development costs and certain eligible preproduction and marketing expenses, is available to companies incorporated in Canada for projects to be carried out in Canada. Title to any invention or patent is vested in and remains the property of the company. Companies are expected to have the capabilities and facilities to undertake the development work and also to provide for the manufacture and sale of the resulting products.

Industrial Research and Development Incentives Act. This legislation, enacted in March 1967, provides cash grants or equivalent tax credits equal to 25% of capital expenditures of corporations for scientific research and development conducted in Canada, and for the increase in current expenditures in Canada for scientific research and development over the average of such expenditures in the preceding five years. To qualify for a grant, expenditures must be for scientific research and development which, if successful, is likely to lead to an extension of the corporation's business. In addition, a corporation must undertake to exploit the results of the research and development in Canada and must normally be free to export products resulting from such research and development to all countries of the world.

Automotive Program. The Canada—United States Agreement on Automotive Products, signed in January 1965, provides for the removal of tariffs and other impediments to trade between the two countries in motor vehicles and original equipment parts. The basic objectives of the Agreement are creation of a broader market to permit benefits of specialization and scale, trade liberalization to enable both countries to participate in the North American market on a fair and equitable basis, and development of conditions in which market forces would operate to attain economic patterns of investment, production and trade.

As a result of this program, Canada produces an increasing share of the total North American output of vehicles and components. Canadian exports of vehicles and parts and employment in this industry have increased substantially, and investment in new plants and expansion of existing facilities have been extensive.

The Machinery Program was introduced on January 1, 1968 to increase efficiency in Canadian industry by enabling machinery users to acquire advanced capital equipment at the lowest possible cost while affording Canadian machinery producers tariff protection on what they manufacture. At the same time, Canadian machinery producers are protected by a single statutory rate of duty which applies immediately when they are in a position to supply. This is particularly significant for Canadian producers of custom-engineered machinery.

The program covers a broad range of machines classifiable under Tariff Item 42700-1 including general-purpose machinery, metalworking and woodworking machinery, construction and materials-handling equipment and various types of special industry machinery, such as pulp and paper and plastics industry machinery, and service industry equipment. The statutory rate of duty under that Tariff Item is 2½% British preferential and 15% most-favoured-nation.

The program provides that the duty otherwise payable on machines, accessories, attachments, control equipment, tools and components, imported under Tariff Item 42700-1, may be remitted if such remission is in the public interest and the goods imported are not available from production in Canada. A Machinery and Equipment Advisory Board advises the Minister of Industry, Trade and Commerce regarding the eligibility of machinery for remission of duty in accordance with the provisions of the Tariff Item. The Board, in turn, is assisted by the branches of the Department concerned with individual industries, including machinery manufacturing. Final authority for granting remission lies with the Governor in Council.

Under the program, machinery producers may also apply for remission of duty on production parts and components included in Tariff Item 42700-1 which they cannot procure in Canada. This provision is intended to stimulate Canadian machinery manufacturers to specialize their production and enable them to compete more effectively.

Since June 18, 1971 the Machinery Program has been extended to imports under Tariff Item 41100-1 covering machinery for use in sawmills and logging. In the same year, the Machinery and Equipment Advisory Board took over from the Adjustment Assistance Board the responsibility for examining all tariff remission applications in respect of machinery and equipment or production tooling for the manufacture of original equipment, automotive parts and accessories.

The Building Equipment, Accessories and Materials Program (BEAM) was established to help achieve greater efficiency and productivity in the manufacture and use of building equipment, accessories and materials. The objectives of the program include: establishment of a comprehensive National Construction Information System; encouragement of modular dimensional standardization and co-ordination; acceleration of the industrialization of the building process; development and expansion of export markets; promotion of uniform building regulations and standards; and encouragement of building design excellence through awards programs.

The program is being implemented and is subject to further development through the Construction Industry Development Council and in co-operation with industry through the major associations. The Council, which is responsible to the Minister of Industry, Trade and Commerce, is national in scope, comprising 35 representatives of the manufacturing, design and contracting sectors of the industry as well as labour unions, universities and government. Co-operating directly in the BEAM program are the Canadian Construction Association, the Royal Architectural Institute of Canada, the Association of Consulting Engineers of Canada, the Specification Writers Association, the National Home Builders Association, and the Housing and Urban Development Association of Canada.

Having established the needs and priorities for construction information in Canada, ways in which a comprehensive and flexible information system can be developed were identified. A thesaurus of Canadian construction industry terms has been compiled in both English and French to assist in providing a means of indexing the system and to resolve the ambiguity in construction terminology. A glossary equating French and English construction industry terms has also been prepared.

The design and performance specifications for a National Construction Information System have been completed and work has started on the acquisition of data suitable to the system. To provide a commercial operations channel, a non-profit corporation known as the Canadian Construction Information Corporation has been established and is in the process of implementing the system.

The Department has continued to encourage the increased use of dimensional standardization and co-ordination of building components and buildings. Initially, conferences were held throughout Canada to acquaint policy-makers within the industry with the technological and economic advantages of modular standardization. These conferences continue to be followed up by a program of clinics. In addition, a directory of modular building components is published annually.

To encourage building design excellence, awards for the creative use of materials in architecture and structural engineering have been presented under the Design Awards Program. This program is sponsored by the National Design Council and the Department of Industry, Trade and Commerce in co-operation with the appropriate industry association within the framework of the BEAM program.

The promotion of universal use of the National Building Code is continuing. Manitoba has made it mandatory for all larger cities and towns. Ontario, New Brunswick, Nova Scotia and British Columbia have taken or are planning to take similar action and Quebec is studying its feasibility. A *Building standards index* lists all codes, standards and specifications used in the Canadian construction industry.

Export opportunities for the goods and services of the construction industry continue to be identified through the Department's trade posts abroad and in co-operation with industry.

Industrial design. The design program, authorized by the National Design Council Act 1961 and administered by the Department's Office of Design is aimed at promoting and expediting improvement in the products of Canadian secondary industry. The Office of Design is also responsible for developing and carrying out programs and projects pertaining to more widespread use of improved industrial design.

Design programs include: financial and technical assistance to educational institutions to introduce design training at the technical and university levels; seminars on various facets of design for professionals, educators, business executives and the general public; awards programs for achievements over a broad field of design endeavour; scholarships for advanced training in industrial design in Canada and abroad; grants for design research and promotion by Canadians; and technical and financial assistance to committees and groups attempting to foster effective design on a national, regional or industrial level.

Under the Industrial Design Assistance Program (IDAP) introduced in 1970, manufacturers are given financial support to develop new and improved designs by employing qualified industrial designers. The assistance is available to companies incorporated in Canada and is concentrated on relatively short-term projects of product innovation; it is limited to 50% of the projected design cost, subject to technical and commercial feasibility.

A National Design Council Chairman's Award for Design Management was introduced in 1970, to be presented to the management group which, in the Council's opinion, does the most to integrate and efficiently apply good design policy.

The Defence Industry Productivity Program is designed to enhance the technological competence of the Canadian defence industry in its export activities by providing financial assistance to industrial firms for selected projects. Emphasis is placed on those areas of defence technology having civil export sales potential. Assistance may cover the development of products for export purposes; the acquisition of modern machine tools and other advanced manufacturing equipment to meet exacting military standards; and assistance with preproduction expenses to establish manufacturing sources in Canada for export markets. Manufacturing equipment projects are selected for assistance on the basis that the machinery acquired will make a significant contribution to increased productivity.

The Automotive Adjustment Assistance Program, which remained in force until June 30, 1973, offered opportunities to Canadian automotive parts manufacturers for expanded production, rationalization of output and reduced costs. In order to take advantage of these opportunities, Canadian parts makers had to engage in substantial re-equipment and plant expansion. Term loans were made available for the financing of the acquisition, construction, installation and modernization of facilities or machinery and for use as working capital. The tariff remission aspects of the program are the responsibility of the Machinery and Equipment Advisory Board.

The General Adjustment Assistance Program (GAAP), established in 1968 and revised in 1971, helps manufacturers take advantage of export opportunities arising from the Kennedy Round of tariff reductions under the General Agreement on Tariffs and Trade (GATT) and assists manufacturers of textile or clothing goods or footwear to improve their competitive position in domestic or export markets. The program also provides assistance to manufacturers who have been injured, or are threatened with serious injury, as a result of these reductions, and to manufacturers of textile or clothing goods or footwear who require financing to adapt efficiently to disruptive import competition which is threatening, or causing, serious injury. Assistance under the program is also available to firms that provide marketing, financing or other services essential to the operations of manufacturers described above.

The governing regulations require that eligible firms for whom loan insurance or direct loans are approved be unable to acquire the financing provided by the Board or through the Board's support from conventional sources on reasonable terms and conditions.

Assistance is available in three forms: government insurance against the risk of loss on loans made by private lenders to finance viable restructuring projects; direct government loans to eligible applicants in special cases; and grants covering up to 50% of cost to manufacturers who require outside consulting assistance to develop restructuring proposals. The program is administered by a General Adjustment Assistance Board on which both private industry and government are represented.

Ship Construction Subsidy Regulations. Since 1967 the Department has been responsible for shipbuilding matters, including the Ship Construction Subsidy Regulations and certain sections of the Income Tax Act and Regulations. The industry continues to respond to the policy of national competition for government shipbuilding requirements and has made active use of the subsidy program for commercial vessels. The latter provides a subsidy rate of 17% for ships other than fishing vessels. For fishing vessels the subsidy rate is 35%. With the support of other programs, the Department has encouraged the development of production of marine components and exports in this area have been increased. Assistance has also been given to several shipyards to encourage modernization of shipbuilding facilities.

Shipbuilding Temporary Assistance Program (STAP). Because the demand for Canadian-flag ships has been in a temporary decline and assistance under the Ship Construction Subsidy Regulations is not applicable to foreign-flag vessels, the Shipbuilding Temporary Assistance Program was announced in November 1970 to enable Canadian shipyards to maintain their employment levels by building for the world market. STAP shipbuilding grants, paid to shipyards building for registration in countries other than Canada, were initially at 17% of approved cost (14% for very large vessels) but are now 15.5% and 12.5%, respectively.

Pharmaceutical Industry Development Assistance (PIDA). This program was authorized by Parliament in March 1968, and is administered by the Pharmaceutical Industry Development Advisory Committee. Through PIDA the Department encourages development of a more efficient pharmaceutical industry; by means of financial assistance, firms are encouraged to form

corporate units able to employ competent management and other personnel, perform suitable research and development and undertake effective marketing programs. It enables manufacturers of generic drugs to improve their ability to produce and market lower-priced prescription drugs at more competitive prices by reorganizing their manufacturing and marketing systems. The program is particularly helpful to smaller drug manufacturers. Direct loans at commercial interest rates are available to provide the capital necessary for implementing approved pharmaceutical industry development proposals.

Program to Enhance Productivity (PEP). PEP offers outright grants of specific amounts up to \$50,000 to support half the costs of carrying out intensive feasibility studies on the use and application of innovative techniques to achieve significantly lower unit costs of production in manufacturing and processing industries in Canada.

To be considered for a grant, an applicant should have under development, with reasonably good hope of success, some application of existing technology to the production phase of his operation as distinct from the research stage. If further data on the projected gain in productivity cannot be obtained without committing additional financial resources to a more extensive in-depth feasibility study, and if the investigation would otherwise be shelved, money may be made available under PEP. The program is, however, designed to eliminate support for projects that would in all probability be carried out in the normal course of events.

If the study includes carrying out market research, not more than 25% of total approved costs should represent this component.

The Program for Export Market Development is designed to help increase exports of Canadian goods and services. Canadian companies may obtain repayable grants toward defraying approved expenses which would otherwise inhibit their attempts to earn a share of markets. The program is divided into four main components.

Section A, incentives for participation in capital projects abroad, is applicable anywhere outside Canada. The term "capital projects" as used here is intended to describe facilities, systems and other projects requiring the provision of skilled services, engineering products and other capital goods. Section B, market identification and marketing adjustment, emphasizes manufactured goods but it can be more widely applied. It is applicable anywhere outside Canada and the continental US. Section C, participation in trade fairs abroad, is not restricted as to markets, products or services. It is applicable anywhere outside Canada but participants in Canadian national stands at the same fair abroad are not eligible. Section D, incoming foreign buyers, also has no restrictions on markets, products or services. Buyers from anywhere outside Canada and the continental US may be invited by a company to examine products and production in Canada.

The Department's contribution will normally be 50% of eligible costs incurred. If a company receiving assistance succeeds in obtaining the business sought, repayment of the Department's contribution will be required, but no repayment is required if the company is unsuccessful.

Promotional Projects Program. The program of trade fairs and missions was set up to promote the export of Canadian products and services. It consists of a number of sponsored promotions designed to meet particular requirements and includes trade fairs abroad, trade missions, in-store promotions, travelling sample shows, incoming trade delegates and buyers programs, export-oriented training programs and, under the programs for export market development, incentives for participation in trade fairs abroad and incentives for incoming foreign buyers.

The Fashion Design Assistance Program assists Canadian apparel, textile, leather and footwear industries to compete internationally by encouraging more creative Canadian design and improved product quality and by building an image of fashion design in Canada that will attract Canadian and foreign buyers. The Designer Development part of the program attempts to expand opportunities for Canadian fashion designers. Fashion/Canada encourages fashion awareness by promoting good design and workmanship by Canadian designers.

Counselling Assistance to Small Enterprises (CASE) provides an opportunity for owners and managers of small businesses engaged in manufacturing or tourism to benefit, at nominal cost, from a service provided by retired business executives selected for their management experience. Under special circumstances government contributions can also be made toward

the cost of engaging consulting firms. The program operates from offices in Montreal and Winnipeg.

Through the CASE program, the managers of small companies can discuss their particular problems with experienced businessmen, explore new ideas to help their businesses grow and examine new methods for improving productivity. A CASE counsellor will visit the applicant's place of business, make a detailed analysis of the company's problems and opportunities and recommend action to be taken. He may also help to implement these recommendations.

In the allotment of CASE resources, priority will be given to Canadian-controlled businesses.

The Development of Management Courses Program is designed to help non-profit professional, industry, business or management associations develop management retraining or upgrading courses of high quality. Assistance in the form of government grants may cover up to 100% but usually not more than 75% of the cost of developing new course material or revising the material for existing courses.

17.3.2 Provincial assistance

Assistance given by the respective provincial governments to manufacturing within their own territories is outlined in the following paragraphs.

Newfoundland. The Newfoundland government, through its Department of Industrial Development, offers advice and assistance to prospective industry in determining desirable plant locations in the province and in preparing feasibility studies. Information can be made available on the source and availability of raw materials, transportation costs, labour costs and a variety of other economic data. The government will transport industrialists anywhere in the province to obtain a first-hand look at potential plant sites. The Department of Industrial Development also provides liaison with the public and private sectors.

Financial assistance may be provided by the Newfoundland and Labrador Development Corporation in the form of loans against the securities offered by the prospective enterprise, or the acquisition and holding of shares or other securities of any company wherever incorporated, with the right of the enterprise to buy back these shares. The Corporation will also be providing a complete range of management advisory services.

The government may provide direct financial assistance based on cost-benefit analyses. Buildings, where they exist, and land may be provided on very attractive terms. Industrial training facilities are available throughout the province for specialized courses to meet the requirements of incoming industry.

Prince Edward Island. Provincial assistance to manufacturers and processors is provided through Industrial Enterprises Incorporated (IEI), an autonomous Crown corporation administered by an independent board of directors composed of businessmen. IEI provides financial assistance to new and existing manufacturing industries. It identifies specific industrial opportunities, establishes their feasibility and also provides management assistance in industrial engineering, marketing and finance.

The corporation makes loan capital, working capital and equity capital available. It constructs and rents completely serviced factory buildings, provides equipment leasing, maintains industrial property and operates industrial parks. Long-term financing is provided at attractive rates of interest.

IEI establishes contacts with venture capital groups throughout Canada and in other countries who show an interest in Prince Edward Island projects. It maintains an internal consulting group to provide management assistance to PEI companies.

The Corporation has established a Small Business Financing Program to assist manufacturers and processors whose annual sales volume is not more than \$250,000. The program can finance 100% of the cost of buildings, 75% of capital cost of machinery, guarantee 50% of working capital and provide 25% of required equity; the maximum assistance is \$50,000.

Nova Scotia. Industrial Estates Limited (IEL), a provincial Crown corporation formed in 1957, provides up to 100% mortgage financing on the cost of land and buildings and up to 60% of the installed cost of machinery of new or expanding Nova Scotia manufacturers or processors. Repayment schedules are negotiable and may be accelerated without penalty. Existing tax agreements with all municipalities except Halifax limit local taxes on IEL-assisted industries to

1% of the building cost for a 10-year period and no tax on equipment or inventory for the same period. IEL's Small Business Financing Division assists manufacturing or processing industries whose gross annual sales do not exceed \$1 million. Financing may include short-, medium- and long-term loans, loan guarantees and minority equity positions. A loan may not exceed \$150,000.

The Nova Scotia Resources Development Board, affiliated with the Department of Development, provides term financing on the security of fixed assets for projects defined under The Industrial Loan Act, The Industrial Development Act, The Agriculture and Rural Credit Act, The Forest Improvement Act and The Fishermen's Loan Act. It provides financing for tourism facilities, farms and primary agriculture processing, fish plants and vessels, saw and planing mills and timber lands.

The Department of Development sponsors the Market Assistance Program which is designed to complement the existing export market development programs administered by the federal Department of Industry, Trade and Commerce. The program provides varying reimbursement schedules for Nova Scotia companies participating in trade fairs, market education programs and incoming buyers programs.

Special municipal tax assistance as authorized under the Nova Scotia Bonus Act may provide assistance to new or expanding firms by limiting either the assessment or the tax rate for a specified period of time.

The province co-operates closely with the Cape Breton Development Corporation, a federal Crown corporation, and contributes financially to some of the industry-development projects sponsored by it.

New Brunswick. The Department of Economic Growth has the over-all responsibility for co-ordinating and implementing provincial industrial development policy. The Department focuses its efforts in this direction through three main operating branches — Regional Development, Transportation and Communications; Investment Management; and Trade and Industrial Services.

The Regional Development, Transportation and Communications Branch directs and co-ordinates provincial transportation policy; develops and directs provincial communications policy; co-ordinates the implementation of the federal-provincial General Development Agreement as it applies to the Department's area of responsibility; and provides assistance to community groups to foster regionally oriented actions to establish and enlarge local industrial development.

The Investment Management Branch reviews and evaluates industrial projects which are presented to the New Brunswick Industrial Finance Board for financial assistance; and provides after-care services to firms that have received financial assistance from the Industrial Finance Board.

The Trade and Industrial Services Branch provides support to industry through programs designed to meet general and specific needs; they include export sales and promotion, management upgrading, technical advice and assistance, import replacement, tariff and documentation assistance, market research and the maximization of New Brunswick product content in public construction and government purchasing.

The Department of Economic Growth also operates the New Brunswick Development Office in London, England. It provides general information and assistance to firms in Britain and Common Market countries which may be interested in a New Brunswick location. The Office also develops and expands European markets for New Brunswick products; encourages joint ventures between New Brunswick and European manufacturers; and facilitates the setting-up of licensing agreements between provincial and European manufacturers.

The New Brunswick Development Corporation, the New Brunswick Industrial Finance Board, Provincial Holdings Limited, New Brunswick Multiplex Corporation, and the Research and Productivity Council are some of the agencies associated with the Department of Economic Growth.

The New Brunswick Development Corporation was established by the government of New Brunswick to attract new industry to the province and to encourage the expansion of existing industries. Its efforts are directed primarily to the secondary manufacturing sector. Existing legislation empowers the Development Corporation to make loans or loan guarantees or to take equity as a shareholder. Financial assistance is not meant to compete with existing con-

ventional lenders and, in practice, the corporation must be satisfied that the funds required could not be obtained from conventional sources on reasonable terms and conditions. In addition to financial aid, the NBDC offers free research and investigative services to assist companies setting up initially or expanding and provides a range of after-care services.

The New Brunswick Industrial Finance Board was set up to provide financial assistance to manufacturers or processors in the province. Such assistance normally takes the form of a bank loan guarantee. Terms and conditions are subject to individual negotiation but specifically require the applicant to provide reasonable equity and security in the form of a first charge on assets. The Board is considered to be a lender of last resort and the applicant must, therefore, have unsuccessfully approached normal conventional lenders.

Provincial Holdings Limited was established by the New Brunswick government as a Crown corporation to hold and administer the province's equity position in various companies. This agency is prepared to take an equity position in manufacturing industries wishing to locate in New Brunswick. The extent of the equity taken by Provincial Holdings is negotiable and depends on various factors in a particular proposal.

The New Brunswick Multiplex Corporation was established by the federal and provincial governments to promote and implement the establishment of a metal-working complex in and around Saint John. The project incorporates a relatively new industrial development concept — the planned establishment of a group of main manufacturing plants along with the associated ancillary industries. The principal financial incentives available for companies investing in the metal-working complex are administered by the federal Department of Regional Economic Expansion and consist of capital grants and loan guarantees. The actual level of a grant which might be paid to any particular company (up to a defined maximum) is determined by the economic impact of the investment and its relationship to the over-all project.

The Research and Productivity Council was established primarily to provide a source of technical support services for New Brunswick industry. The Council maintains a well-equipped centre for engineering and problem-solving, industrial research and development, and management consulting. RPC carries out research and problem-solving on a cost-recovery basis for clients in Canada and abroad. An industrial engineering service is made available to New Brunswick (and Prince Edward Island) companies by RPC through a National Research Council contract. In addition, the National Research Council, in co-operation with RPC, provides free technical information and assistance to New Brunswick (and PEI) companies.

Quebec. In 1971 legislation dealing with financial aid to industry was combined under two Acts: Bill 20, the Quebec Industrial Development Assistance Act, which created the Quebec Industrial Development Corporation; and Bill 21, "an Act to promote industrial development through fiscal advantages". The aim of these programs is to help transform Quebec's industrial structure through aid to high-technology industries and to reorganize the production facilities of existing industries to improve their competitive position. Companies unable to obtain financial assistance at reasonable rates elsewhere are eligible for aid under these programs if it would contribute to the economic development of the province or any of its regions. The amount of assistance granted depends on the area, the kind of goods manufactured and the production techniques used.

The Industrial Development Corporation may grant financial assistance to a manufacturing establishment making a capital investment for construction; purchasing or expanding a plant or factory; investing in machinery, tools or equipment; purchasing licences or patents; or improving the financial organization of the business. Depending on the nature or needs of the company concerned, the assistance may take various forms: loans at lower-than-market interest rates; assumption of part of the costs of a loan; exemption from repayment of part of the loans which the business has contracted with the Corporation subject to meeting certain criteria as to productivity and the creation of new jobs; purchase, by the Corporation, of buildings or machinery for resale or rental to a manufacturer; and purchase of shares of any manufacturing industry up to a maximum of 30% of the paid-up capital stock of the company.

Under Bill 21 the government may grant a reduction in income tax on corporation profits from any investment in Quebec by manufacturers provided the amount of the investment is at least \$150,000. Permissible investments are for building or expansion of plants or factories or for the purchase of new machinery, tools or equipment. In computing their profits, approved companies may deduct up to 30%, 50% or 100% of their investment depending on the region in which the investment is made.

A manufacturing or processing plant selling and delivering part of its Quebec production outside the province may receive exemption from provincial sales tax on goods purchased for its use or consumption in the proportion that its out-of-province sales bears to its total sales for the year. Under the same program, a business may be exempt from provincial sales tax on gas or electricity used directly for processing. Moreover, the manufacturer is entitled to a partial reimbursement of sales tax paid on construction materials used in his industrial buildings.

A manufacturing firm may also receive total repayment of the tax paid on gasoline or diesel fuel if the fuel is used to operate machinery or as a raw material in the manufacture of certain products. Industrial machinery used in Quebec for manufacturing or processing is also exempt from provincial sales tax.

For a number of years the provincial government has sought to find easier access to export markets for Quebec producers. To this end, through its International Services Branch, the Department of Trade and Industry has economic advisers attached to its delegations and offices abroad, provides financial and technical assistance to firms wishing to participate in industrial shows, organizes trade missions and provides information on export techniques and the various aspects of external trade. Finally, through its Industrial Research Institute, the province makes information and technical assistance available to industry throughout the province.

Ontario. The Ontario Development Corporation (ODC), the Northern Ontario Development Corporation (NODC) and the newly organized Eastern Ontario Development Corporation (EODC) are Crown agencies established by the Ontario government to provide financial and advisory services to business in order to stimulate industrial growth, economic development and employment opportunities in the province. They report to the Ontario Legislature through the Minister of Industry and Tourism. Their activities are governed by boards of directors composed of representatives from the business and financial communities and organized labour.

Loan programs administered by the ODC, NODC and EODC include the Ontario Business Incentive Program which provides loans to encourage industrial and economic development in Ontario. Incentive loans are repayable, although initial repayment may be deferred. The loans may be interest free or at a rate lower than ODC's prevailing rate of interest.

Term loan programs include: small business loans to Canadian owned companies in the province to expand their operations in manufacturing or services closely allied to manufacturing; venture capital loans to Canadian owned companies to introduce new technology; pollution control equipment loans to companies which must install approved pollution control equipment and are unable to finance it from their own resources; tourist industry loans for tourist resort operators to upgrade existing facilities and to establish new accommodation; export support loans to finance the production and warehousing of goods for export against specific orders; and industrial mortgages and lease-backs to assist with the establishment or expansion of manufacturing facilities.

The ODC administers Northam Industrial Park in Cobourg and Huron Industrial Park in Centralia where it rents industrial space and housing. It also manages the sale and leasing of property in Sheridan Park near Toronto to companies engaged in industrial research and development.

The Ontario Ministry of Industry and Tourism has several programs to assist business people. The Tourism Division provides information on location and expansion of tourist operations, economic studies and other pertinent material; it advises tourist and service industry operators on ways to increase and improve their operations. The Industry Division has specific services available to assist manufacturing companies and supporting service industries to maximize use of facilities, apply technology, establish new production facilities and find business opportunities. Technology, industrial design and development, product performance, domestic and international marketing and loan programs are discussed in seminars with independent business people, industrial commissions and municipal councils. The Manufacturing Opportunity Days program presents new products and processes, licensing opportunities, joint ventures from around the world and contracts for tendering.

The Ministry maintains 17 field offices throughout the province to meet local needs and problems and also has a work force covering 35 countries in 16 international field offices; seven are in the United States — Atlanta, Boston, Chicago, Cleveland, Los Angeles, Minneapolis and New York. Others are located in Mexico City, São Paulo, Brussels, Frankfurt,

London, Milan, Stockholm, Tokyo and Vienna. To aid the manufacturer, the international staff works in conjunction with industrial development officers in Toronto to arrange trade missions, business appointments, plant visits, incoming buyer missions, tourist incentive programs, and to provide consulting services with government and investment representatives. Some trade missions include visits to international trade fairs and exhibitions enabling executives from Ontario companies to see new products and manufacturing techniques which could increase product diversification, manufacturing volume and profits. In addition this program introduces Ontario companies to foreign concerns wishing to establish contacts for licensing or joint ventures or expansion in Canada.

In Mississauga, Ont., the Sheridan Park Corporation has established the Sheridan Park Research Community, a \$42 million undertaking employing 1,600 persons in 10 resident companies and corporations. It has research laboratories and facilities that offer an exchange of ideas and techniques and help participating companies stay competitive in world markets.

Manitoba. The key objective of the Department of Industry and Commerce is to attract and establish industry throughout the province, particularly in rural areas. It has established various branches and agencies that provide industry specialization combined with comprehensive program support.

The Trade and Industry Group consists of four branches with specific commodity interests: Food and Drug, Machinery and Equipment, Industrial Materials and Construction, and Consumer Products; and a fifth, the Trade Development Branch which promotes the export of all commodities. Each branch encourages economic growth through expansion of existing firms and attraction of new investment; studies trends in its sector; identifies business opportunities; and assists firms through market research, business development and case-work.

The Programs and Productivity Group has five branches directly concerned with implementing programs in the areas of science and technology, design improvement, transportation and distribution systems, productivity and management development and regional planning and development. Some 60 professionals plan and carry out all programs, consulting and engineering services and research activities. The Department works closely with other agencies on matters affecting Manitoba's economic development.

Associated private agencies are supported by Department of Industry and Commerce staff. Through the offices of the Trade Development Branch the Manitoba Export Corporation assists Manitoba firms in developing export sales. It works closely with each industry branch and is empowered to appoint agents abroad and to handle exports for Manitoba manufacturers. Its services include extensive practical advice on pricing, documentation, export procedures and tariffs, the organization of trade fair participation, incoming and outgoing missions, and the export of professional services. The Corporation can assume all duties of an export department for Manitoba companies. The Manitoba Design Institute promotes and encourages the application of industrial design principles in Manitoba companies through a series of seminars, workshops, product evaluation sessions, packaging clinics and direct assistance.

The Manitoba Development Corporation is a Crown corporation established in 1958 to encourage balanced development of industry in the province. The Corporation provides financial or other assistance to new and existing industrial enterprises and to community development corporations as well as technical and business advice and guidance to persons and organizations receiving financial assistance and, on request, financial consulting services to other industrial enterprises; promotes diversification of business activity and improvement of existing industry; helps develop export markets for Manitoba products; and encourages the expansion of small- to medium-sized enterprises in Manitoba. When financing is not otherwise available loans are generally extended on fair terms and conditions, provided the owner has a reasonable investment in the business.

The Communities Economic Development Fund, established in July 1971, provides assistance in the form of term loans to finance existing business enterprises and to establish new ones in remote communities. Much of the aid from the Fund goes to northern Manitoba in the form of loans to community councils and Indian bands, individuals, partnerships and corporate entities.

Manitoba Regional Development Corporations are non-profit organizations set up in 1964 to undertake promotion in a wide sphere of regional interests. They were conceived as a

response to some of the challenges facing the rural areas of the province — population out-migration, a slow economic growth rate, and the need for action on a regional basis. Through its Regional Development Branch, the Department of Industry and Commerce has therefore encouraged the formation of regional development corporations in Manitoba with the province contributing to their operating costs. Over the past 10 years, seven corporations have been established covering all of Manitoba outside the city of Winnipeg.

Manitoba offers a number of programs to assist companies engaged in production/processing, distribution or specialized construction. The Feasibility Studies Incentive Program assists companies in commissioning studies to develop plans for establishing or expanding manufacturing facilities in Manitoba, and in applying for grant assistance from the federal Department of Regional Economic Expansion. The Research and Development Assistance Program enables eligible Manitoba companies to develop innovative products, processes or methods for utilization of the natural resources of the province and allows educational institutions to undertake research and development of significant and direct economic benefit. The Productivity Improvement Program provides productivity audit analyses of individual firms and industry groups by specialists who identify problem areas, obstacles to growth and opportunities for improvement in the marketing, production, technology, manpower, organizational effectiveness and financial areas of the firm, and make recommendations suited to the needs and capabilities of the firm. The Manpower Development Assistance Program assists Manitoba companies in analyzing productivity and designing personnel training programs to meet specific company requirements. The Design Improvement Assistance Program makes funds available to assist companies in improving the design and quality of their products. The Manitoba Export Assistance Program gives financial support to Manitoba manufacturers who wish to sell goods or services in markets outside the province. The program provides assistance by exhibiting products at trade fairs, bringing potential buyers to Manitoba and organizing sales missions, and by promoting the export of professional services.

Saskatchewan. The primary objectives of the Department of Industry and Commerce are to stimulate the growth of the Saskatchewan economy and to broaden and diversify the economic base of the province. The Department's programs are carried out through its branch organization.

The main functions of the Industry Development Branch are to: encourage the establishment of new manufacturing, processing, distribution and warehouse facilities, resource industries and industrial service operations; assist existing firms to expand and diversify their manufacturing, service and distribution facilities; locate and evaluate development opportunities in manufacturing, processing and resource development, and in the service and warehousing sectors; and compile, publish and distribute information on all phases of Saskatchewan's economic development and potential.

The objective of the Business Assistance Branch is to revitalize and support existing business enterprises in the province by providing counselling and consulting expertise in the fields of accounting, merchandising, transportation and marketing. To make these services accessible to business firms throughout the province, branch representatives are located at six centres outside Regina.

The Trade Development Branch is primarily involved in the promotion of trade in Saskatchewan products in regional, national and international markets, particularly in the US, Europe and the Pacific Rim. The prime contact points for this program are the office of the Agent-General in London, England, and a soon-to-be-established trade office in the Pacific Rim area.

The Tourist Development Branch undertakes activities to assist the Saskatchewan tourist industry to further its development. These activities include: carrying out a marketing program to motivate travel to and within Saskatchewan; providing advice and information to persons wishing to travel in the province; and assisting, through counselling, advice and grants, in the development of tourist attractions.

The new Research and Development Branch collects and disseminates statistical data, and prepares or contracts for, economic feasibility studies to determine what imports and new products might be produced in Saskatchewan, and what primary products can be further refined or processed in the province.

Operation Recycle is a special project initiated to administer the collection of abandoned

or scrap vehicles for shredding into acceptable steel furnace feed. It is estimated that approximately 100,000 vehicles will be collected over a three-year period and other recycling projects are under active consideration.

The Industry Incentives Act encourages the establishment, expansion and modernization of industry in certain areas of the province. The program provides assistance in the form of forgivable loans to new or expanding manufacturing establishments. These loans are interest-free and are made for a period of six years. The Industry and Commerce Development Act authorizes the Department to: make grants to local governments or civic groups for the construction of major tourist facilities or for the promotion of major events and attractions; undertake, either for its own use or on a shared-cost basis with business enterprises, feasibility studies and research to identify new business opportunities; provide, either through department representatives or outside consultants, counselling and advice on all forms of business problems; and make financial assistance available to a community-based group to continue the operation of a business threatened by closure which would seriously disrupt the community in which it is located.

The province also provides financial assistance to business enterprises through the Saskatchewan Economic Development Corporation (SEDCO), a Crown corporation. SEDCO was originally established in 1963 to provide loans for the establishment or expansion of manufacturing enterprises. Since August 1972, its terms of reference have been significantly broadened to permit the provision of financial assistance to virtually all types of businesses. In addition to industrial enterprises, SEDCO loans may now be made to retail, wholesale and service businesses. SEDCO assistance can take many forms, the most common of which is a first mortgage loan over a medium term. Security for such loans consists of specific pledges of land, buildings and/or equipment, and the support of the individuals involved in the business is normally pledged as well. Repayment terms for such loans are designed to suit the income pattern of the enterprise, and may include such features as step-payments, seasonal payments or similar arrangements.

Loans can be granted for terms varying from a few months to 20 years and in amounts from a few thousand to many millions of dollars. The term is determined by the estimated life of security pledged and by the earnings of the business. Equipment-based loans would be for five to eight years, while building and equipment loans might be eight to 12 years, and real estate alone as security would warrant a loan of up to 20 years. Working capital loans would range from one month to two years.

In all cases, the Corporation expects that the owners of the borrowing company will have a reasonable equity contribution in the enterprise. In certain instances, the Corporation may consider taking an equity investment in its own right if required to maintain a reasonable balance between debt and equity. The Corporation also has industrial sites and buildings which it is prepared to make available to eligible enterprises. Lease, lease-purchase or outright sale of such properties can be considered and, in certain circumstances, the Corporation will consider constructing a facility for the subsequent sale or lease to a prospective client.

Alberta. The province assists industry through the facilities of the Alberta Opportunity Company (AOC), a Crown agency created to promote economic growth by stimulating the establishment of new businesses and aiding in the expansion of existing enterprises. In pursuing this objective AOC gives priority to Albertans and Alberta owned enterprises, small businesses, centres of small population, job-creating projects, research and development projects, promotion of marketing and export potential, enhancement of tourist potential, provision of employment and business experience for Alberta students, encouragement of local development groups and promotion of pollution control projects.

In order to qualify for assistance, a business may be a proprietorship, partnership, co-operative, or corporate body, must be a business operating for gain or profit, must be located or to be located in Alberta, must provide assurance that any assistance provided will be utilized exclusively within Alberta, and must be of a type considered by the Company to be eligible within the terms of the Act and its Regulations. Eligible types of business include manufacturing, processing and assembly operations, service industries, commercial wholesale and retail trade, recreational facilities, tourist establishments, local development organizations, student business enterprises, and new industries of any kind which are unique and valuable additions to the province. The program is not designed to apply to finance companies, suppliers of resi-

dential accommodation other than tourist facilities, public utilities including power generation and distribution, resource-based industries such as mining, oil and gas production, logging, farming and ranching.

A number of considerations enter into the decision as to whether or not assistance will be granted: the contribution the project would make to the economy, the local community and the province as a whole; economic viability of the proposal considering capabilities of management, the business environment, adequacy of over-all financing and technical and ecological considerations; proof that the financial assistance requested is not obtainable from other conventional sources on reasonable terms and conditions; and the availability of security to provide reasonable protection. Assistance may be provided for establishing new businesses, acquiring fixed assets — land, buildings and equipment, expanding existing facilities, strengthening working capital, financing raw material or finished inventories for manufacturers, and research and development projects.

Financial assistance is made available directly or by guarantee in various forms: capital loans (maximum \$500,000); working capital loans (maximum \$500,000); inventory financing for manufacturers (maximum \$500,000) for the stockpiling of either the raw materials used in the manufacturing process or finished products resulting from that process (in actual operation AOC will purchase the inventory from the manufacturer under a buy/sell agreement at established prices to a level of 80% of "laid-in" cost or wholesale price, as the case may be); research and development loans up to 50% (maximum \$50,000) of the total cost of an approved project undertaken by a commercial enterprise. Such projects are restricted to applied research and development programs which contribute to improvements in one or more of the following areas: technological advances to products or development of new products; technological advances to production facilities; adoption of improved management techniques; and development of new markets.

Business management counselling services may be provided without charge by AOC professional consultants and include management advice and guidance on financial, technical and marketing matters for small- and intermediate-size Alberta businesses which are not in a financial position to obtain this type of assistance elsewhere. Services under the program are provided through the Company's head office in Ponoka and its branch offices in Calgary and Edmonton. Financing programs are individually dealt with by an experienced staff of professional personnel. Applications for assistance call for suitable back-up material, such as financial statements, etc., which is studied and broadly assessed. Applications are considered for approval by the board of directors and, normally, funds are available in four to six weeks.

British Columbia. The Department of Industrial Development, Trade and Commerce provides services designed to encourage and assist in the orderly growth of secondary manufacturing in British Columbia. The Department organizes and sponsors visits by groups of BC manufacturers to prime export markets in the United States, overseas and elsewhere in Canada. The Department also assists individual companies and industry groups to participate in trade shows and fairs around the world.

Through its Technical Assistance Program, the Department will share costs of marketing and feasibility studies for companies considering expansion or diversification. The Department acts as liaison with the British Columbia Development Corporation which was set up to provide loans and loan guarantees to BC industry and business. Department counsellors use statistical information collected and published to encourage regional industrial development and growth of the secondary manufacturing base. The Department also maintains a trade and industry office at British Columbia House in London, England.

17.4 Government aid and controls

17.4.1 The Department of Consumer and Corporate Affairs

The functions of the Department relate to consumer affairs; corporations and corporate securities; combines, mergers, monopolies and restraint of trade; bankruptcy and insolvency; patents, trade marks, copyright and industrial design.

The Department has five main divisions — the Bureau of Consumer Affairs, the Bureau of Corporate Affairs, the Bureau of Intellectual Property, the Field Operations Service and the Bureau of Competition Policy. The Bureau of Consumer Affairs co-ordinates government activities in the field of consumer affairs. Branches within the Bureau include Consumer Ser-

vices, Consumer Research and the Consumer Standards Directorate. The Bureau of Corporate Affairs administers legislation and regulations pertaining to corporations. Its branches include Corporations, Bankruptcy, Securities and Research. The Bureau of Intellectual Property administers laws pertaining to patents, copyright and industrial design, and trade marks, with a branch responsible for each of these three fields. The Field Operations Service supervises the Department's operations across Canada, staffing regional and district offices in Vancouver, Winnipeg, Toronto, Montreal and Halifax and in 25 other cities. They ensure that laws and regulations administered by the Department are uniformly applied and interpreted in all parts of the country. The field force includes consumer consultants and information officers in each region, complaints officers, inspectors and specialists in the fields of bankruptcy and false and misleading advertising.

The Bureau of Competition Policy has four branches, specializing in Combinations, Mergers and Monopolies, Trade Practices and Research. The Restrictive Trade Practices Commission (Combines Investigation Act) is also in the Department and reports directly to the Minister.

Anti-combines legislation. Canadian anti-combines legislation seeks to eliminate restrictive trade practices in order to stimulate maximum production, distribution and employment through open competition. Legislative measures, including some formerly included in the Criminal Code, were amended in 1960 and consolidated into the Combines Investigation Act (RSC 1970, c.C-23).

In general terms, the Combines Investigation Act makes illegal the operation of combines that prevent, or lessen "unduly", competition in production, manufacture, purchase, barter, sale, storage, rental, transportation or supply of an article of trade or commerce, or in the price of insurance. Although the exchange of statistics or defining of product standards are not to be construed as illegal practices, this exemption is no longer valid if the purpose of the exchange of information is to reduce the possibility of increased competition in the fields of prices, production quantities or quality, customers, markets or distribution channels, or if it has the effect of restricting entry or expansion into that particular business, trade or industry. While combines which relate to export trade only are generally exempt from these constraints imposed by the Act, any such arrangement that may have an adverse effect on the volume of export trade or on the businesses of Canadian competitors or domestic consumers is still subject to prosecution.

Under the Act it is illegal to participate in a merger or a monopoly that has operated, or is likely to operate to the detriment of the public, whether consumers, producers or others.

Price discrimination and "predatory price cutting" are treated very explicitly in the Act. No supplier may make a practice of discriminating among his competing trade customers by offering more advantageous prices to one over another. Under the law, if a second buyer is willing to buy on the same terms and in the same quantities, he must be given the same price. Prices established by a supplier cannot be set lower in one locality than another, or unreasonably low anywhere, if the policy is designed to eliminate or lessen competition or has that effect.

Advertising or display allowances to competing trade customers must be offered in proportion to their purchases and any expenses required to be incurred by customers must also be in proportion to their purchases. No service may be exacted in return for allowances unless all different types of customers are able to perform that service.

Other sections of the Act forbid misleading or deceptive advertising, either as to normal price or as to presumably factual statements describing goods or property offered for sale.

The "resale price maintenance" clause of the Act is possibly one of the most explicit in the field of restrictive practices. The suggested list price for goods offered for resale at the wholesale or retail level can be only that — a suggested price. No supplier of goods for resale may prescribe the final price at which the goods must be sold, nor can he cut off supplies if a merchant refuses to abide by the suggested prices. Some relief to the supplier is offered by the qualifications that no one can be automatically considered to have practised resale price maintenance if the goods are withheld because there is sound reason to believe that the merchant was making a practice of using the products of the supplier as "loss-leaders" or as bait advertising, or engaging in misleading advertising or failing to provide the service that the final purchaser had a right to expect.

The Director of Investigation and Research is responsible for investigating combines and other restrictive practices, and the Restrictive Trade Practices Commission is responsible for

appraising the evidence submitted to it by the Director and the parties under investigation, and for making a report to the Minister of Consumer and Corporate Affairs. When there are reasonable grounds for believing that a forbidden practice is engaged in, the Director may obtain from the Commission authorization to examine witnesses, search premises, or require written returns. After examining all the information available, if the Director believes that it proves the existence of a forbidden practice, he submits a statement of the evidence to the Commission and to the parties believed to be responsible for the practice. The Commission then sets a time and place for a hearing at which both sides are represented. The Commission prepares and submits a report to the Minister of Consumer and Corporate Affairs; such reports are ordinarily required to be published within 30 days.

Under the provisions of the Act, general inquiries may be made into restraints of trade which, although not forbidden or punishable, may affect the public interest. The courts, including the Federal Court of Canada, in addition to imposing punishment for a contravention of the legislation, may issue an order restraining persons from further contravention or directing the dissolution of a merger or monopoly as the case may be. Application also may be made to the courts for such an order in lieu of prosecuting and convicting for a contravention of the legislation. Prosecutions for offences against the substantive provisions of the legislation (other than the section dealing with price misrepresentation which is punishable only on summary conviction) may be taken either in the provincial courts or with the consent of the accused in the Federal Court of Canada.

Nine reports of inquiries under the legislation were published between January 1, 1968 and June 30, 1971 and are listed in the *1972 Canada Year Book* p 1033. Since then the report of inquiry into draught beer in Metropolitan Toronto has become available. Copies of all reports are available from Information Canada or the Office of the Director of Investigation and Research.

Patents. Patents for inventions are issued under the provisions of the Patent Act (RSC 1970, c.P-4) and Patent Regulations have been proclaimed to carry into effect the objectives of the Act. Applications for patents for inventions and requests for information about such patents should be addressed to the Commissioner of Patents, Bureau of Intellectual Property, Department of Consumer and Corporate Affairs.

In the year ended December 31, 1973, 20,028 patents were granted. Of these, 6.1% resulted from inventions made by residents of Canada, 6.3% by residents of Britain and 64.7% by residents of the United States.

Printed copies of Canadian patents issued from January 1, 1948 to date are available at \$1 each. The *Patent Office Record*, issued weekly, contains a list of patents issued during the week covered, information about services in the Patent Office and information of concern to the patent profession.

Canadian and foreign patents may be consulted at the Patent Office Library. British patents and abridged specifications thereof from 1617 to date and United States patents from 1845 to date are available, as well as many patents, indexes, journals and reports from Australia, India, Ireland, New Zealand, Pakistan, South Africa, Austria, Belgium, Colombia, Czechoslovakia, Egypt, France, Federal Republic of Germany, Italy, Japan, Mexico, the Netherlands, Norway, Sweden, Switzerland and Yugoslavia. A list of the foreign patents available is published in the Patent Office Record.

Copyright, industrial design and timber marks. Copyright protection is governed by the Copyright Act (RSC 1970, c.C-30) in force since 1924. Protection is automatic without any formality, although a system of voluntary registration is provided. Copyright exists in Canada in every original literary, dramatic, musical and artistic work and in contrivances by means of which sounds may be mechanically reproduced, if the author was, at the date of making of the work, a British subject, a citizen or subject of a foreign country which has adhered to the Berne Convention and the additional Protocol, or resident within Her Majesty's Dominions and if, in the case of a published work, the work was first published within Her Majesty's Realms and Territories or in such foreign country. The term for which the copyright exists is, except as otherwise expressly provided by this Act, the life of the author and a period of fifty years after his death. Canada belongs to both the International (Berne) Copyright Convention and the Universal Copyright Convention. Under the terms of the Universal Copyright Convention unpublished works of Canadian authors are protected in all convention countries without for-

malities such as compulsory registration or special manufacturing and printing provisions. The only requirement is with respect to published works. In such cases every copy of the published work must bear, in a prominent place, the copyright symbol, followed by the name of the proprietor and the year of publication.

The Industrial Design Act provides a maximum 10-year period of protection for shape, pattern, ornamentation and/or configuration applied to an article of manufacture, provided that the design is registered within one year of publication in Canada. Protection is granted if an examination does not reveal any other design already registered to be identical with or closely resembling the proposed design. The name of the proprietor, the letters Rd. and the year of registration must appear upon the article to which the design applies.

People or companies who float timber on the inland waters of Ontario, Quebec and New Brunswick must, based on the Timber Marking Act, select a mark or marks and apply for registration thereof within one month after engaging in this business.

Trade marks. The Trade Marks Office, a Branch within the Bureau of Intellectual Property, administers the Trade Marks Act (RSC 1970, c.T-10) which covers all legislation concerning the registration and use of trade marks and supersedes from July 1, 1954, former legislation enacted under the Unfair Competition Act, the Union Label Act and the Shop Cards Registration Act. Correspondence relating to an application for registration of a trade mark should be addressed to the Registrar of Trade Marks, Ottawa.

Applications are advertised for opposition purposes in the *Trade Marks Journal*, a weekly publication that also gives particulars of every registration of a trade mark. The required fee payable on application for registration of a trade mark is \$35 and for advertisement of an application, \$25.

Trade marks registered during the year ended December 31, 1973 numbered 9,201 compared with 7,407 for the year before; renewals totalled 3,635.

17.4.2 Trade standards

17.4.2.1 The Standards Council of Canada

The Standards Council of Canada is the national co-ordinating agency through which organizations concerned with voluntary standardization may co-operate in recognizing, establishing and improving standards in Canada. It enables organizations to play a larger and more effective role in formulating and promoting the use of standards to meet the needs of the economy through the National Standards System. The System includes organizations involved in standards-writing and in testing and certification. Furthermore, it encourages the development of a broader and more energetic Canadian standards program to meet both national and international responsibilities.

The objects of the Council are to foster and promote voluntary standardization in fields relating to the construction, manufacture, production, quality performance and safety of buildings, structures, manufactured articles and products and other goods, including components, not expressly provided for elsewhere by law, to advance the national economy, benefit the health, safety and welfare of the public, assist and protect consumers, facilitate domestic and international trade and further international co-operation in the field of standards.

At the end of 1973 the National Standards System had accredited four standards-writing organizations which are authorized to write National Standards of Canada — the Canadian Gas Association, the Canadian Government Specifications Board, the Canadian Standards Association and the Underwriters' Laboratories of Canada. Certification organizations and testing laboratories will also be accredited to the System. An Advisory Committee on Standards for Consumers identifies consumers needs in the standards field and makes the necessary recommendations to Council.

The Council, advised by a Committee on Conversion to Metric (SI) Standards, supports the Metric Commission by providing the technical basis for Canadian conversion and guidance and assistance in planning for, and carrying out, a program to provide standards expressed in the International System of Units (SI) to all organizations participating in metric conversion. Representatives of the National Standards System actively participate in the conversion activities of each of the 10 steering committees and each of the approximately 55 sector committees formed under the auspices of the Metric Commission. The Council is also in close touch

with the inter-departmental committees for conversion of the federal, provincial and territorial governments and with the American National Metric Council in the United States.

In the international field, the Council appoints the members and directs the activities of the Canadian National Committee of the International Electro-Technical Commission and is the member body for Canada in the International Organization for Standardization. The Council co-ordinates and integrates the national and international standards and oversees the accreditation of 280 delegates to represent Canada at over 100 international technical committee meetings each year.

17.4.2.2 Trade standards and regulations

In its consumer program, the Department of Consumer and Corporate Affairs is responsible for the administration of broad legislation which affects the business community. Policies and programming are determined by the Consumer Standards Directorate, and the necessary field supervision by the Field Operations Service.

Hazardous products. The Product Safety Branch administers the Hazardous Products Act which deals with consumer goods. The Act makes specific mention of products designed for household, garden, or personal use, for use in sports or recreational activities or for use by children. It also mentions without reference to end use, poisonous, toxic, flammable, explosive and corrosive products.

Under the Act, the Minister is empowered to establish mandatory standards for application in Canada. Compliance orders now being enforced include the use of shatterproof glass in patio and shower doors, flammability standards for children's sleepwear and protective standards for hockey helmets. Regulations governing toys, cribs and portable car seats are designed to protect children. Other products required to meet rigid specifications include matches, charcoal, ceramics and electrical appliances.

General commodity field. A Packaging and Labelling Act will give uniformity to packaging practices in Canada, reduce the possibilities of deception in packaging and advertising and control proliferation of package sizes. During 1973 extensive consultations were held with consumers and industry associations prior to the publication of proposed regulations in the *Canada Gazette* on September 22, 1973. Sixty days were allowed for consumers, dealers and other interested persons to make representations.

Regulations under the Textile Labelling Act, in effect since December 1, 1972, require labels on all consumer textile articles. The label must include fibre names and percentages and the identification of the dealer. The Regulations also deal with misrepresentation in both labelling and advertising. The Textile Care Labelling System of coloured symbols recommending proper care for textile products is a voluntary program at this time. The Canadian Standard Size (CSS) system for children's garments, developed by the Canadian Government Specifications Board in conjunction with the Department of Consumer and Corporate Affairs, is administered under the National Trade Mark and True Labelling Act. This system is also voluntary, although dealers must register for a licence before claiming that the garment does, in fact, conform to the CSS and before affixing such a label to the product.

Control of marking of precious metal articles is maintained under the Precious Metals Marking Act. The new Regulations came into force in July 1973.

Food. In areas of health, grading, standards and composition, the Food and Drug Act, the Canadian Agricultural Products Standards Act and the Fish Inspection Act are generally applicable. The Consumer and Corporate Affairs Department is charged with administration of the economic fraud aspects in distribution. This responsibility relates mainly to labelling and advertising in any segment of the news media.

Advertising. Most legislation has particular requirements to ensure against misleading advertising, but Sections 36 and 37 of the Combines Investigation Act are especially noteworthy as they include general provisions against misleading advertising practices.

Measurement. The Weights and Measures Act prescribes the legal standards of weight and measure for use in Canada; it also requires control of the type of all weighing and measuring devices used for commercial purposes and their periodic verification and surveillance directed toward the elimination of device-tampering and short-weight sales. A replacing Act has been passed by Parliament and will be proclaimed with the issue of new regulations. The fundamen-

tal objectives of existing legislation are unchanged. The new Act is an updating, and complements the proposed packaging and labelling legislation.

The Electricity Inspection Act and the Gas Inspection Act control the approval before sale and use of devices used for metering or otherwise billing for sales of electricity and gas; they also provide for continual in-use inspection.

17.5 Bankruptcies and commercial failures

Two series of figures are included here which, although closely related as far as subject matter is concerned, cover different aspects of the field of bankruptcies and commercial failures. The first is limited to the supervision, by the Superintendent of Bankruptcy, of the administration of bankrupt estates under the Bankruptcy Act (RSC 1970, c.B-3); it gives information on the amounts realized from the assets as established by debtors and indicates that values actually paid to creditors are invariably very much lower than such estimates alone would imply. It can therefore be assumed that this applies in even greater degree to the more extended fields covered in the second section, compiled by Statistics Canada, which is limited to bankruptcies and insolvencies made under federal legislation and includes business failures only.

Administration of bankrupt estates. The Bankruptcy Act was last revised in 1949 and amended in 1966. The amendments were instigated by exposures and suggestions of illegal and improper practices in connection with bankruptcy proceedings or administration. They do not constitute a complete revision of the Bankruptcy Act but were designed to provide, as an interim measure, remedies to the most urgent areas of complaints. They provide the Superintendent of Bankruptcy with direct and immediate authority in the field of investigation and inquiry, and tighten the procedures and requirements in a number of areas, such as that of proposals which an insolvent person may make to his creditors. In other words, these amendments were intended to provide remedies in situations where it had been shown by experience that abuses of the bankruptcy process are most likely to occur. The amendments also contain a new Part X entitled "The Orderly Payment of Debts" which may be brought into force in any province at the request of the provincial authorities concerned. Six areas have taken advantage of this part of the legislation: Alberta on April 17, 1967, Manitoba on June 1, 1967, Saskatchewan on April 1, 1969, British Columbia on June 1, 1970, Nova Scotia on July 1, 1970, Prince Edward Island in April 1971 and the Northwest Territories in November 1972.

A new program called the Small Debtor Program was instituted in June 1972. While it is not an amendment to the Bankruptcy Act, it authorizes federal employees who have been appointed as trustees to handle the estates of certain wage earners who cannot obtain the services of a private trustee.

A report issued annually by the Superintendent of Bankruptcy gives statistics and comments on various activities in the field of bankruptcy, such as prosecution for offences, issue of licences for trustees in bankruptcy, number of estates reported and closed during the year, and costs of bankruptcy administration in Canada. These data are summarized in Table 17.17.

Returns under the Bankruptcy and Winding-up Acts. Statistics Canada data on bankruptcies and insolvencies cover only failures coming under the federal Bankruptcy Act and the Winding-up Act. Figures cover business failures only. Table 17.18 gives yearly comparisons of liabilities — as estimated by debtors — for the main regions of the country. Table 17.19 shows the number of bankruptcies and insolvencies by industry and economic area for 1972.

Sources

- 17.1 - 17.2 Manufacturing and Primary Industries Division, Industry Statistics Branch, Statistics Canada.
- 17.3.1 Information Services Branch, Department of Industry, Trade and Commerce.
- 17.3.2 Supplied by the respective provincial government departments.
- 17.4.1 Information and Public Relations, Department of Consumer and Corporate Affairs.
- 17.4.2 The Standards Council of Canada; Information and Public Relations, Department of Consumer and Corporate Affairs.
- 17.5 Superintendent of Bankruptcy, Department of Consumer and Corporate Affairs; Business Finance Division, General Statistics Branch, Statistics Canada.

Tables

..	not available	e	estimate
...	not appropriate or not applicable	p	preliminary
—	nil or zero	r	revised
--	too small to be expressed	certain tables may not add due to rounding	

17.1 Value of shipments of goods of own manufacture, by province, 1961 and 1970-73 (million dollars)

Province or territory	1961	1970	1971	1972P	1973P
Newfoundland	135.9	263.3	261.9	292.2	361.3
Prince Edward Island	30.6	62.7	58.0	..	..
Nova Scotia	381.4	758.0	798.2	944.9	1,123.8
New Brunswick	390.6	730.2	806.8	909.1	1,096.1
Quebec	7,022.2	13,084.0	13,833.2	14,840.0	17,069.0
Ontario	11,563.7	24,009.6	26,270.6	29,026.5	34,057.0
Manitoba	716.7	1,260.4	1,344.9	1,492.2	1,819.2
Saskatchewan	331.9	544.6	578.0	642.5	800.3
Alberta	935.5	1,900.2	2,080.6	2,375.2	2,828.3
British Columbia	1,927.0	3,760.6	4,236.0	4,894.9	6,119.7
Yukon Territory and Northwest Territories	3.4	7.3	7.7	..	..
Canada	23,439.0	46,380.9	50,275.9	55,489.0 ¹	65,360.8 ¹

¹Includes Prince Edward Island, the Yukon Territory and Northwest Territories.

17.2 Value of shipments of goods of own manufacture, by industry group, 1970-73 (million dollars)

Industry group	1970	1971	1972P	1973P
Food and beverage industries	8,639.1	9,111.2	10,105.9	12,183.2
Tobacco products industries	527.2	575.2	621.4	669.6
Rubber and plastics products industries	1,073.3	1,163.9	1,301.9	1,500.2
Leather industries	397.4	420.2	459.7	489.1
Textile industries	1,575.8	1,697.9	1,866.2	2,137.8
Knitting mills	414.7	455.1	474.2	529.4
Clothing industries	1,371.0	1,487.8	1,608.4	1,876.5
Wood industries	1,951.5	2,346.9	2,927.4	3,764.5
Furniture and fixture industries	731.5	786.6	923.5	1,060.4
Paper and allied industries	3,930.5	4,000.9	4,278.9	5,019.5
Printing, publishing and allied industries	1,545.3	1,653.8	1,827.6	2,086.1
Primary metal industries	3,918.5	3,948.5	4,227.4	5,129.0
Metal fabricating industries (except machinery and transportation equipment industries)	3,357.1	3,535.4	3,831.3	4,370.8
Machinery industries (except electrical machinery)	1,776.7	1,865.8	2,101.1	2,450.0
Transportation equipment industries	5,757.3	6,931.4	7,770.6	9,000.8
Electrical products industries	2,671.7	2,794.6	2,985.2	3,396.6
Non-metallic mineral products industries	1,264.6	1,489.2	1,614.7	1,917.6
Petroleum and coal products industries	1,819.1	2,114.3	2,393.6	2,873.8
Chemical and chemical products industries	2,620.8	2,782.0	2,915.2	3,413.2
Miscellaneous manufacturing industries	1,037.7	1,115.3	1,241.8	1,482.1
All manufacturing industries	46,380.9	50,275.9	55,489.0	65,360.3

17.3 Net profit before taxes and extraordinary items, as a percentage of total revenue of corporations classified to the manufacturing industries, 1971-73

Industry group	1971 ^r	1972	1973
Food and beverage industries	5.4	5.3	5.6
Rubber industries	9.8	10.1	7.7
Textile industries	3.5	3.3	4.6
Wood industries	2.4	6.3	11.4
Paper and allied industries	2.9	3.7	9.4
Printing, publishing and allied industries	8.5	9.8	10.4
Primary metal industries	8.0	7.9	9.4
Metal fabricating industries	6.4	6.5	7.6
Machinery industries	6.3	7.1	7.6
Transportation equipment industries	4.9	6.2	5.7
Electrical products industries	5.2	7.0	7.4
Non-metallic mineral products industries	8.1	8.2	9.8
Petroleum and coal products industries	10.6	11.1	13.7
Chemical and chemical products industries	7.9	8.9	9.7
Miscellaneous manufacturing industries	8.7	9.3	9.3
All manufacturing industries	6.1	6.8	8.1

17.4 Summary statistics of manufactures, 1962-71

Year	Estab- lish- ments No.	Activity							
Manufacturing activity									
Production and related workers									
		Number	Man- hours paid '000	Wages \$ '000	Cost of fuel and electrici- ty \$ '000	Cost of materials and supplies used \$ '000	Value of shipments of goods of own manu- facture \$ '000	Value added \$ '000	
1962	33,414	974,376	2,071,376	3,834,514	540,447	13,974,877	25,790,087	11,429,644	
1963	33,119	1,003,566	2,137,977	4,095,916	564,387	15,337,534	28,014,888	12,272,734	
1964	33,630	1,057,502	2,265,188	4,513,633	615,108	16,928,476	30,856,099	13,535,991	
1965	33,310	1,115,892	2,384,002	5,012,345	675,641	18,622,213	33,889,425	14,927,764	
1966	33,377	1,172,943	2,498,012	5,575,206	731,726	20,642,695	37,303,455	16,351,740	
1967	33,267	1,168,651	2,478,916	5,869,085	759,780	21,371,785	38,955,389	17,005,696	
1968	32,643	1,160,226	2,458,791	6,278,429	808,764	23,090,970	42,061,555	18,332,204	
1969	32,669	1,189,887	2,515,183	6,921,525	860,525	25,383,484	45,930,438	20,133,593	
1970	31,928	1,167,063	2,450,058	7,232,256	903,264	25,699,999	46,380,935	20,047,801	
1971	31,908	1,167,810	2,448,419	7,819,050	1,000,243	27,661,379	50,275,917	21,737,514	
Total activity									
Working owners and partners									
		Number	With- drawals \$ '000	Total employees		Cost of materials and supplies used and goods purchased for resale \$ '000	Value of shipments and other revenue \$ '000	Value added \$ '000	
				Number	Salaries and wages \$ '000				
1962	33,414	17,228	60,744	1,389,516	6,096,174	16,118,144	28,473,319	11,986,666	
1963	33,119	16,030	59,426	1,425,440	6,495,289	17,558,196	30,823,107	12,875,073	
1964	33,630	15,747	60,098	1,491,257	7,080,939	19,467,898	34,071,578	14,247,184	
1965	33,310	14,620	59,457	1,570,299	7,822,925	21,563,010	37,638,412	15,785,311	
1966	33,377	13,894	60,076	1,646,024	8,695,890	24,195,610	41,722,527	17,260,256	
1967	33,267	13,377	59,187	1,652,827	9,254,190	25,546,764	44,143,808	18,049,639	
1968	32,643	12,084	58,798	1,642,352	9,905,504	27,546,942	47,646,657	19,483,614	
1969	32,669	11,583	59,128	1,675,332	10,848,341	30,347,637	52,130,615	21,456,276	
1970	31,928	10,760	58,605	1,637,001	11,363,712	30,805,904	52,886,022	21,417,748	
1971	31,908	10,286	60,939	1,628,404	12,129,897	33,462,590	57,479,421	23,187,881	

17.5 Summary statistics¹ of manufactures, by industry group, 1970 and 1971

Industry group and year	Estab-lish-ments No.	Manufacturing activity				Cost of fuel and elec-tricity \$'000	Cost of materials and supplies \$'000	Value of shipments of goods of own manu-facture \$'000	Total activity	
		Production Number	Man-hours paid \$'000	Wages \$'000	workers				Number	Salaries and wages \$'000
Food and beverage industries	1970 5,778	143,501	302,501	785,273	101,532	5,644,570	8,639,102	2,945,122	221,768	1,383,910
	1971 5,599	142,427	300,104	852,873	109,336	5,899,753	9,111,176	3,160,060	218,315	1,471,184
Tobacco products industries	1970 29	7,331	14,362	49,522	2,042	346,750	527,228	207,144	9,902	74,054
	1971 29	7,077	13,629	51,381	2,240	328,743	575,253	233,290	9,680	77,504
Rubber and plastics products industries	1970 622	32,495	68,258	189,579	15,356	507,135	1,073,270	563,311	44,189	289,648
	1971 664	32,593	68,215	204,821	17,133	529,032	1,163,894	615,831	43,461	289,369
Leather industries	1970 487	24,286	49,469	100,359	2,857	194,529	397,415	199,119	28,286	131,433
	1971 470	24,283	50,012	108,682	3,025	205,483	420,208	213,067	27,930	140,015
Textile industries	1970 931	55,159	116,396	272,553	23,257	859,189	1,575,783	689,813	69,714	393,047
	1971 915	55,150	117,400	297,265	26,361	1,697,932	1,697,932	725,825	69,350	422,780
Knitting mills	1970 318	20,658	43,482	81,779	3,217	232,900	414,690	178,306	37,735	106,985
	1971 318	20,885	44,321	88,868	3,498	252,374	455,055	202,426	33,919	116,331
Clothing industries	1970 2,184	86,617	173,278	334,079	4,163	711,266	1,371,041	652,554	97,418	425,673
	1971 2,164	87,495	174,178	362,021	4,560	776,852	1,487,773	709,086	98,457	461,021
Wood industries	1970 3,360	75,225	157,535	446,439	36,274	1,138,722	1,951,475	789,764	87,829	551,880
	1971 3,164	78,420	165,368	517,425	43,500	1,295,814	2,346,945	1,002,939	91,846	538,202
Furniture and fixture industries	1970 2,209	34,497	72,839	173,338	6,790	341,258	731,465	385,226	42,238	235,186
	1971 2,165	35,011	74,314	187,115	7,287	375,291	786,564	408,013	43,021	253,530
Paper and allied industries	1970 635	90,679	195,536	684,092	213,991	1,952,698	3,930,522	1,781,402	121,080	978,114
	1971 642	90,086	191,811	731,326	243,687	2,023,370	4,000,851	1,772,389	119,709	1,039,306
Printing, publishing and allied industries	1970 3,600	49,671	101,270	337,788	9,169	510,291	1,545,320	1,025,206	84,045	606,958
	1971 3,649	49,026	98,751	357,770	10,166	543,026	1,653,839	1,102,138	84,110	649,508
Primary metal industries	1970 407	88,839	185,556	680,780	170,690	2,025,371	3,918,548	1,769,087	116,545	958,507
	1971 405	86,452	179,544	714,600	183,414	1,967,763	3,948,458	1,812,159	114,314	1,017,713
Metal fabricating industries (except machinery and transportation equipment industries)	1970 4,067	107,156	228,670	724,514	34,419	1,630,684	3,357,086	1,717,726	140,701	1,020,409
	1971 4,143	103,890	221,176	749,349	36,870	1,697,565	3,535,379	1,813,736	137,015	1,060,181
Machinery industries (except electrical machinery)	1970 851	47,457	99,800	334,123	13,037	899,851	1,776,686	883,543	80,534	640,960
	1971 813	45,712	96,185	350,173	14,357	968,026	1,865,818	873,212	71,062	584,534
Transportation equipment industries	1970 905	105,164	221,993	787,781	39,338	3,804,026	5,757,285	1,946,300	146,979	1,208,545
	1971 963	111,338	226,734	912,231	46,012	4,328,011	6,931,367	2,361,599	150,155	1,337,495
Electrical products industries	1970 736	75,551	157,031	451,711	19,592	1,355,751	2,671,736	1,279,214	121,034	850,241
	1971 764	74,322	153,251	468,991	21,120	1,388,382	2,794,629	1,389,032	123,181	920,010
Non-metallic mineral products industries	1970 1,280	36,045	78,134	244,200	73,955	476,694	1,264,629	723,741	49,428	361,364
	1971 1,307	38,035	82,474	281,047	83,180	549,770	1,489,174	855,686	51,291	405,131
Petroleum and coal products industries	1970 94	6,686	14,856	64,745	19,178	1,452,565	1,819,127	356,228	15,647	160,653
	1971 101	6,557	14,610	68,215	21,421	1,675,011	2,114,324	429,156	15,517	172,593
Chemical and chemical products industries	1970 1,128	40,086	85,471	279,854	104,708	1,157,262	2,670,835	1,377,623	79,070	637,157
	1971 1,139	38,621	81,938	288,640	112,038	1,224,549	2,781,997	1,442,547	77,377	669,314
Miscellaneous manufacturing industries	1970 2,337	39,960	83,623	209,747	9,698	458,487	1,037,691	577,372	56,749	348,987
	1971 2,394	40,440	84,403	226,257	11,038	493,326	1,115,299	615,324	57,483	380,085
Total	1970 31,928	1,167,063	2,450,058	7,232,256	903,264	25,699,999	46,380,935	20,407,801	1,637,001	11,363,712
	1971 31,908	1,167,810	2,448,419	7,819,050	1,000,243	26,661,379	50,275,917	21,737,514	1,628,404	12,129,897

¹Data compiled according to the 1970 revision of the Standard Industrial Classification.

17.6 Summary statistics¹ of the forty leading industries, ranked according to value of shipments of goods of own manufacture, 1971

Industry	Estab- lish ments No.	Manufacturing activity				Cost of fuel and elec- tricity \$'000	Cost of materials and supplies used \$'000	Value of shipments of goods of own manu- facture \$'000	Total activity		Total value added \$'000
		Number	Man- hours paid '000	Wages \$'000					Number	Salaries and wages \$'000	
1 Motor vehicle manufacturers	22	29,480	62,631	279,937	14,316	2,817,805	3,681,719	850,317	42,334	440,925	1,180,571
2 Pulp and paper mills	142	61,426	130,766	546,239	232,985	1,363,567	2,832,267	1,272,551	79,397	745,608	1,276,837
3 Slaughterhouse and meat processors	460	23,036	49,403	173,572	12,535	1,710,362	2,121,358	403,711	31,332	248,561	420,051
4 Petroleum refining	41	5,874	13,112	63,153	20,222	1,635,520	2,045,825	401,032	14,506	164,424	403,895
5 Iron and steel mills	50	38,308	79,270	333,581	67,432	1,842,036	1,764,037	866,947	49,601	461,627	874,322
6 Motor vehicle parts and accessories manufacturers	203	35,753	77,246	301,885	17,912	898,438	1,660,665	743,802	43,810	392,003	753,828
7 Dairy products industry	809	13,846	29,337	88,174	22,554	1,074,377	1,463,218	375,700	29,855	207,161	428,498
8 Sawmills and planing mills	1,631	44,107	93,150	304,528	28,369	788,768	1,395,507	571,594	50,963	366,440	574,247
9 Miscellaneous machinery and equipment manufacturing	711	32,961	69,546	254,245	10,123	651,397	1,334,704	664,196	50,244	413,568	735,187
10 Smelting and refining	25	25,157	51,906	210,166	95,280	405,149	2,835,621	545,192	32,445	327,458	563,956
11 Miscellaneous food processors, n.e.s.	283	11,093	23,257	68,972	9,736	476,378	852,770	371,648	18,610	135,979	380,780
12 Metal stamping and pressing industry	588	18,583	40,068	134,160	7,122	471,918	843,857	370,469	24,507	194,392	394,799
13 Commercial printing	2,128	28,681	58,407	199,091	5,165	300,373	764,189	460,636	39,632	301,978	472,198
14 Communications equipment manufacturers	235	23,397	48,148	143,809	4,246	277,873	660,190	378,007	44,582	346,331	479,724
15 Publishing and printing	650	15,221	29,913	119,800	4,266	146,202	614,935	464,318	31,732	250,197	463,404
16 Feed industry	786	5,346	11,738	31,071	7,749	470,385	604,791	127,527	8,949	56,938	151,248
17 Women's clothing factories	17	27,589	54,461	116,036	1,211	318,543	563,112	245,067	31,018	149,021	246,874
18 Men's clothing factories	465	29,540	59,625	127,754	1,731	293,233	550,523	254,412	33,883	166,782	256,737
19 Manufacturers of electrical industrial equipment	176	14,982	30,980	101,611	4,224	227,030	534,950	298,387	27,266	214,900	324,664
20 Miscellaneous metal fabricating industries	488	15,700	32,847	103,159	6,632	245,143	513,675	259,194	20,755	148,168	270,202
21 Bakeries	1,824	18,832	39,828	100,262	11,032	228,583	510,123	270,772	29,091	173,411	283,021
22 Plastics fabricating industry, n.e.s.	558	17,022	35,724	92,507	7,510	238,102	501,338	256,081	20,917	128,790	261,540
23 Manufacturers of industrial chemicals (organic), n.e.s.	35	6,141	13,195	59,782	46,009	220,388	484,536	215,444	10,934	118,025	224,758
24 Aircraft and aircraft parts manufacturers	95	14,143	29,511	113,839	4,194	190,042	279,286 ^a	285,051	23,756	283,051	294,753
25 Wire and wire products manufacturers	239	12,220	25,919	87,625	5,846	253,994	478,757	220,669	16,272	126,013	230,036
26 Fruit and vegetable canners and preservers	226	10,631	22,114	54,738	5,073	295,350	478,336	186,004	14,671	88,946	203,331
27 Fabricated structural metal industry	148	13,054	27,440	114,606	4,058	189,456	450,021 ^a	256,507	17,556	159,500	278,341
28 Breweries	41	5,354	11,319	50,432	5,640	116,863	438,093	316,630	9,881	95,319	322,249
29 Manufacturers of pharmaceuticals and medicines	150	5,755	11,854	34,559	2,614	138,784	433,428	294,138	13,831	113,996	313,788
30 Manufacturers of electric wire and cable	35	5,942	12,769	45,601	3,297	256,062	417,210	167,380	8,661	417,210	163,340
31 Miscellaneous paper converters	218	10,406	22,108	63,416	4,054	219,283	416,422	192,949	15,707	113,052	212,420
32 Tobacco products manufacturers	19	5,928	11,319	45,577	1,626	185,262	400,482	217,354	8,262	69,146	218,792
33 Tire and tube manufacturers	15	7,286	15,582	62,966	6,087	185,980	397,847	204,661	11,682	102,232	218,513
34 Manufacturers of industrial chemicals (inorganic), n.e.s.	95	5,669	12,020	48,371	39,864	159,132	392,971	189,241	9,734	88,973	221,388
35 Soft drink manufacturers	385	5,975	12,769	36,574	6,562	181,752	392,070	204,349	14,361	101,816	219,968
36 Miscellaneous chemical industries, n.e.s.	339	7,361	15,425	47,916	6,218	193,618	390,619	193,058	14,369	114,466	215,564
37 Household furniture manufacturers, n.e.s.	680	18,561	39,261	95,261	3,525	387,781	387,584	202,613	12,442	124,424	203,877
38 Fish products industry	348	16,154	32,598	63,458	5,700	234,411	383,872	143,922	18,510	80,052	161,715
39 Distilleries	29	3,096	6,783	26,568	6,092	120,446	278,901	270,901	5,779	5,684	272,912
40 Manufacturers of major appliances	33	8,566	17,384	55,238	3,139	190,332	349,225	163,108	11,895	82,442	172,552
Total, 40 leading industries	16,017	698,840	1,461,584	5,000,189	751,950	19,395,118	34,409,103	14,370,539	1,007,339	7,948,262	15,344,880
Total, all manufacturing industries	31,908	1,167,810	2,448,419	7,819,050	1,000,243	27,661,379	50,275,917	21,737,514	1,628,404	12,129,897	23,187,881

¹Data compiled according to the 1970 revision of the Standard Industrial Classification.^aValue of production.

17.7 Summary statistics of manufactures, by province, 1970 and 1971

Province or territory and year	Manufacturing activity				Cost of fuel and electricity \$'000	Cost of materials and supplies used \$'000	Value of shipments of goods of own manufacture \$'000	Value added \$'000	Total activity	
	Estab-lish-ments No.	Production and related workers	Man-hours paid '000	Wages \$'000					Total employees Number	Salaries and wages \$'000
Newfoundland	1970 252	10,641	23,007	55,663	13,458	128,671	263,304	123,624	12,873	72,219
	1971 245	10,399	21,826	55,284	12,320	130,987	261,931	121,019	12,580	72,757
Prince Edward Island	1970 150	2,207	4,462	8,001	1,022	41,955	62,680	20,535	2,698	10,681
	1971 153	1,795	3,698	7,527	1,010	38,748	58,024	20,153	2,290	10,464
Nova Scotia	1970 818	24,641	51,580	121,568	17,882	437,609	757,992	308,072	31,812	172,704
	1971 795	24,253	49,988	129,170	26,348	481,528	798,152	297,754	31,958	188,792
New Brunswick	1970 612	22,148	46,762	112,228	28,312	437,950	730,223	270,674	28,751	158,281
	1971 609	22,053	47,065	123,853	34,843	497,389	806,806	280,416	28,565	173,118
Quebec	1970 10,176	369,896	783,775	2,057,512	264,849	7,072,888	13,083,969	5,797,861	514,150	3,285,035
	1971 10,135	366,198	774,113	2,171,882	289,628	7,513,331	13,833,179	6,034,856	508,591	3,459,043
Ontario	1970 12,736	562,858	1,182,424	3,711,437	417,851	13,226,000	24,009,636	10,524,756	806,638	5,942,507
	1971 12,740	563,864	1,183,045	4,020,624	455,775	14,250,680	26,270,629	11,596,471	800,047	6,326,544
Manitoba	1970 1,350	35,553	74,023	194,259	26,335	745,381	1,260,416	497,221	48,707	294,625
	1971 1,356	35,527	73,345	207,031	27,627	788,264	1,344,855	534,472	48,325	310,760
Saskatchewan	1970 737	10,139	21,474	64,361	12,413	342,021	544,611	191,983	14,703	97,985
	1971 723	10,177	21,478	69,461	12,166	356,713	578,039	209,965	14,578	103,147
Alberta	1970 1,813	35,902	75,458	230,190	29,036	1,194,894	1,900,206	692,885	51,331	356,653
	1971 1,821	36,517	76,158	251,644	30,953	1,297,115	2,080,617	755,246	51,941	384,480
British Columbia	1970 3,253	92,853	186,633	675,556	92,024	2,067,782	3,760,567	1,617,392	125,088	971,301
	1971 3,302	96,827	197,279	781,068	109,416	2,301,671	4,235,968	1,864,409	129,308	1,099,080
Yukon Territory	1970 16	82	166	432	19	1,233	2,356	1,095	90	498
	1971 15	66	133	426	24	1,253	2,285	1,035	77	514
Northwest Territories	1970 15	143	292	1,049	63	3,616	4,976	1,703	160	1,222
	1971 14	134	292	1,081	134	3,700	5,432	1,719	144	1,200
Canada	1970 31,928	1,167,063	2,450,058	7,232,256	903,264	25,699,999	46,380,935	20,047,801	1,637,001	11,363,712
	1971 31,908	1,167,810	2,448,419	7,819,050	1,000,243	27,661,379	50,275,917	21,737,514	1,628,404	12,129,897

21,417,748
23,187,881

17.8 Summary statistics¹ of manufactures, by census metropolitan area, 1970 and 1971

Census metropolitan area and year	Estab-lish-ments No.	Manufacturing activity				Cost of fuel and elec-tricity \$'000	Cost of materials and supplies used \$'000	Value of shipments of goods of own manu-facture \$'000	Total activity		Total value added \$'000
		Number	Man-hours '000	Wages \$'000					Total employees Number	Salaries and wages \$'000	
Calgary, Alta.	1970 510	10,742	22,473	71,138	6,199	326,441	535,652	205,194	14,838	104,744	211,870
	1971 546	10,892	22,636	77,276	6,699	341,762	576,878	227,082	16,171	123,422	234,922
Chicoutimi—Jonquière, Que.	1970 99	7,692	15,013	61,338	11,118	184,011	352,669	157,147	10,709	89,367	170,201
	1971 584	14,474	30,310	94,820	10,313	431,612	727,439	291,743	20,118	140,772	307,884
Edmonton, Alta.	1970 623	15,187	31,587	109,540	14,737	518,647	867,007	331,587	22,303	171,607	347,084
	1971 128	4,717	9,931	27,370	2,624	148,439	237,610	88,721	6,887	41,803	89,278
Halifax, NS	1970 156	4,798	10,117	29,856	2,833	160,882	256,498	95,865	7,574	52,432	98,544
	1971 681	51,447	106,801	375,167	47,099	1,122,692	2,223,787	1,079,004	66,807	518,717	1,103,487
Hamilton, Ont.	1970 700	50,546	104,871	399,291	52,508	1,174,260	2,370,030	1,144,944	69,471	592,480	1,193,075
	1971 509	32,116	66,196	188,818	11,787	532,704	1,017,221	490,887	42,055	271,073	499,833
Kitchener, Ont.	1970 519	33,364	69,583	218,302	13,456	590,658	1,158,225	558,889	43,701	311,959	577,950
	1971 423	13,626	28,409	84,953	5,710	303,134	604,524	288,685	19,643	136,998	335,029
London, Ont.	1970 321	13,626	28,409	84,953	5,710	303,134	604,524	288,685	19,643	136,998	335,029
	1971 423	13,626	28,409	84,953	5,710	303,134	604,524	288,685	19,643	136,998	335,029
Montreal, Que.	1970 5,243	192,419	405,327	1,080,045	64,183	3,713,491	6,890,574	3,136,477	263,313	1,696,244	3,266,039
	1971 5,625	198,025	415,426	1,185,762	86,835	4,317,364	7,868,522	3,492,906	297,137	2,118,870	3,769,299
Ottawa—Hull, Ont., Que.	1970 332	11,778	25,007	77,313	15,968	206,920	425,654	203,797	17,950	131,193	209,828
	1971 394	12,762	26,940	90,464	18,535	221,414	476,791	234,746	20,045	158,161	246,590
Quebec, Que.	1970 512	15,886	33,184	88,082	10,994	243,216	493,107	239,360	21,173	127,942	246,690
	1971 547	17,545	36,814	104,074	12,765	267,430	566,318	286,998	23,772	155,658	293,893
Regina, Sask.	1970 128	2,209	4,555	14,544	1,725	95,027	150,757	53,390	3,496	24,039	57,240
	1971 146	3,131	6,591	23,047	3,963	121,319	198,239	74,347	4,842	36,887	76,274
St. Catharines—Niagara, Ont.	1970 430	30,416	65,191	254,891	38,853	597,513	1,260,263	625,698	40,006	352,600	634,839
	1971 86	5,133	10,816	31,061	6,377	157,629	241,093	87,964	6,707	42,454	90,316
Saint John, NB	1970 92	5,015	10,727	33,598	8,377	202,089	307,879	99,151	6,607	46,383	102,593
	1971 84	1,824	3,993	9,842	1,591	25,050	57,090	30,613	2,568	14,576	32,342
St. John's, Nfld.	1970 84	1,800	3,835	10,479	1,644	28,059	60,959	31,292	2,668	17,178	38,398
	1971 142	2,824	5,947	17,948	2,731	104,898	161,409	52,974	4,083	26,676	56,601
Saskatoon, Sask.	1970 144	2,829	5,920	18,934	2,550	100,551	157,820	53,651	4,133	28,373	57,870
	1971 74	8,193	16,497	68,549	32,752	46,093	226,093	147,254	11,501	104,557	150,097
Sudbury, Ont.	1970 74	8,193	16,497	68,549	32,752	46,093	226,093	147,254	11,501	104,557	150,097
	1971 94	5,186	10,402	38,752	15,057	110,120	235,470	113,753	6,485	50,242	115,043
Thunder Bay, Ont.	1970 5,684	205,973	432,396	1,300,693	80,180	4,774,579	8,646,668	3,800,755	294,140	2,097,134	4,306,872
	1971 6,221	218,004	457,472	1,484,030	93,247	5,320,512	9,810,460	4,419,814	333,833	2,612,045	4,928,773
Toronto, Ont.	1970 1,846	46,689	94,006	328,448	24,215	1,069,195	1,905,829	821,132	62,356	466,517	894,936
	1971 2,029	49,121	99,835	378,599	27,210	1,199,777	2,167,753	950,980	69,852	580,861	987,176
Vancouver, BC	1970 210	3,703	7,583	26,469	1,230	65,385	123,026	57,130	5,037	36,931	58,945
	1971 212	3,430	7,210	27,769	1,255	65,846	127,877	61,197	4,775	39,008	63,095
Victoria, BC	1970 374	24,571	53,787	221,385	12,866	360,540	1,614,303	654,414	32,345	306,807	708,603
	1971 409	26,475	57,499	245,906	16,848	1,111,044	1,874,404	754,405	34,375	340,793	813,187
Windsor, Ont.	1970 957	29,274	60,864	158,831	10,755	614,995	1,029,794	409,361	39,305	234,023	428,132
	1971 989	28,764	59,518	166,932	10,867	641,745	1,088,019	433,285	40,122	259,164	454,894

¹Indicates change in census metropolitan area boundaries since the preceding year.

²Confidential.

17.9 Establishments in the manufacturing industries, by number employed and by province, 1971

Province or territory	Number employed									Total
	Under 5	5 to 9	10 to 19	20 to 49	50 to 99	100 to 199	200 to 499	500 to 999	1,000 or over	
Newfoundland	93	29	30	32	30	21	7	1	2	245
Prince Edward Island	74	27	26	14	8	3	1	—	—	153
Nova Scotia	270	154	131	126	55	26	23	8	2	795
New Brunswick	194	100	101	93	51	39	24	5	2	609
Quebec	3,111	1,681	1,558	1,795	942	582	320	108	38	10,135
Ontario	3,634	2,059	2,093	2,174	1,183	827	545	147	78	12,740
Manitoba	482	212	219	213	115	72	33	9	1	1,356
Saskatchewan	326	132	114	87	36	21	5	2	—	723
Alberta	661	352	322	259	116	69	33	8	1	1,821
British Columbia	1,296	577	503	450	201	141	100	25	9	3,302
Yukon Territory and Northwest Territories	18	4	4	2	1	—	—	—	—	29
Canada	10,159	5,327	5,101	5,245	2,738	1,801	1,091	313	133	31,908

17.10 Number of establishments in manufacturing industries, by industry group and employment size group, 1971

Industry group	Establishments with total employment of										Total
	Under 5	5 to 9	10 to 19	20 to 49	50 to 99	100 to 199	200 to 499	500 to 999	1,000 or over		
Food and beverage industries	1,748	1,128	962	868	403	281	159	38	12	5,599	
Tobacco products industries	1	2	—	5	3	5	7	4	2	29	
Rubber and plastics products industries	135	96	134	127	82	50	27	8	5	664	
Leather industries	88	53	70	96	69	66	27	1	—	470	
Textile industries	201	139	159	163	88	73	68	16	8	915	
Knitting mills	37	27	40	80	56	49	26	3	—	318	
Clothing industries	408	256	357	569	315	189	59	11	—	2,164	
Wood industries	1,336	464	430	479	235	133	74	11	2	3,164	
Furniture and fixture industries	1,136	323	216	257	123	78	29	3	—	2,165	
Paper and allied industries	48	35	85	130	98	89	97	40	20	642	
Printing, publishing and allied industries	1,553	751	593	420	188	82	43	11	8	3,649	
Primary metal industries	43	31	61	88	60	50	32	22	18	405	
Metal fabricating industries (except machinery and transportation equipment industries)	1,186	801	793	740	309	192	97	21	4	4,143	
Machinery industries (except electrical machinery)	163	141	152	194	113	72	53	19	6	913	
Transportation equipment industries	251	141	123	169	89	74	66	24	26	963	
Electrical products industries	105	77	105	133	121	89	80	36	18	764	
Non-metallic mineral products industries	357	235	266	230	104	68	37	10	—	1,307	
Petroleum and coal products industries	15	16	10	20	9	18	9	4	—	101	
Chemical and chemical products industries	251	184	199	203	131	86	60	23	2	1,139	
Miscellaneous manufacturing industries	1,097	427	346	274	142	57	41	8	2	2,394	
All manufacturing industries	10,159	5,327	5,101	5,245	2,738	1,801	1,091	313	133	31,908	

17.11 Establishments and shipments in the manufacturing industries, by shipments per establishment, 1961 and 1971

Value group	1961				1971			
	Estab- lish- ments No.	Value of shipments of goods of own manufacture \$'000	Aver- age per estab- lish- ment \$'000	Pro- portion of total ship- ments %	Estab- lish- ments No.	Value of shipments of goods of own manufacture \$'000	Aver- age per estab- lish- ment \$'000	Pro- portion of total ship- ments %
Up to \$24,999	9,245	106,779	12	0.5	4,238	56,638	13	0.1
\$ 25,000-\$ 49,999	4,677	168,079	36	0.7	3,784	138,028	36	0.3
50,000- 99,999	4,562	328,307	72	1.4	4,223	304,161	72	0.6
100,000- 199,999	4,260	610,675	143	2.6	4,219	607,535	144	1.2
200,000- 499,999	4,555	1,462,027	321	6.2	5,370	1,728,645	322	3.4
500,000- 999,999	2,400	1,689,457	704	7.2	3,372	2,393,689	710	4.8
1,000,000- 4,999,999	2,875	6,123,965	2,130	26.1	4,853	10,813,881	2,228	21.5
5,000,000 and over	783	12,949,667	16,539	55.3	1,849	34,233,339	18,515	68.1
Total and average	33,357	23,438,956	703	100.0	31,908	50,275,917	1,576	100.0

17.12 Establishments in the manufacturing industries, by value of shipments of goods of own manufacture and by province, 1971

Province or territory	Up to \$9,999	\$10,000 to \$24,999	\$25,000 to \$49,999	\$50,000 to \$99,999	\$100,000 to \$199,999	\$200,000 to \$499,999	\$500,000 to \$999,999	\$1,000,000 to \$4,999,999	\$5,000,000 and over	Total
Nfld.	42	29	20	18	25	27	26	58		245
PEI	23	21	17	16	23	23		30		153
NS	69	79	106	117	97	135	83	79	30	795
NB	38	59	76	73	69	111	53	99	31	609
Que.	480	926	1,126	1,306	1,358	1,741	1,149	1,544	505	10,135
Ont.	398	927	1,421	1,602	1,636	2,236	1,414	2,186	920	12,740
Man.	92	125	184	177	182	204	143	201	48	1,356
Sask.	65	89	120	119	82	100	64	65	19	723
Alta.	72	169	231	291	280	318	165	207	88	1,821
BC	164	366	476	500	461	471	258	406	200	3,302
YT and NWT	—	5	7	4	6	4		3	—	29
Canada	1,443	2,795	3,784	4,223	4,219	5,370	3,372	4,853	1,849	31,908

17.13 Establishments and employment in the manufacturing industries, by number employed per establishment, 1961 and 1971

Size group	Estab-lishments No.	Em-ployees No.	Working owners and partners No.	Proportion of total employment ¹ %
1961				
Under 5 employed	12,352	16,846	10,675	2.0
5-14 "	9,134	71,207	5,150	5.6
15-49 "	6,829	184,550	1,055	13.6
50-99 "	2,445	169,319	88	12.4
100-199 "	1,377	190,540	17	13.9
200-499 "	869	261,628	4	19.1
500-999 "	243	169,392	—	12.3
1,000-1,499 "	55	68,743	—	5.0
1,500 or more "	53	165,577	—	12.1
Head offices	—	54,733	—	4.0
Total	33,357	1,352,535	16,989	100.0
1971				
Under 5 employed	10,159	14,788	7,566	0.9
5-9 "	5,327	34,132	1,843	2.1
10-19 "	5,101	70,101	568	4.3
20-49 "	5,245	162,495	239	10.0
50-99 "	2,738	191,194	32	11.7
100-199 "	1,801	253,101	27	15.5
200-499 "	1,091	329,101	11	20.2
500-999 "	313	213,683	—	13.1
1,000 or more "	133	283,010	—	17.4
Head offices	—	76,799	—	4.7
Total	31,908	1,628,404	10,286	100.0

¹Includes working owners and partners.

17.14 Trends in domestic exports of manufactures, 1965-73 (million dollars)

Year	Fabricated materials	End products	Total manufactured goods ¹
1965	3,923.5	1,606.3	5,529.8
1966	4,217.0	2,455.1	6,672.1
1967	4,417.3	3,476.5	7,893.7
1968	5,027.9	4,702.4	9,730.4
1969	5,344.9	5,792.5	11,137.4
1970	6,083.4	6,010.1	12,093.5
1971	6,035.2	6,641.4	12,676.6
1972	6,796.5	7,648.6	14,445.1
1973	8,531.9	8,950.3	17,482.2

¹These categories of exports are only approximately equivalent to exports of manufactured goods.

17.15 Percentage of specified principal statistics accounted for by establishments and ancillary units of foreign-controlled companies, by industry group, 1970 Census of Manufactures

Industry group	Establishments	Value of shipments of goods of own manufacture	Value added total activity	Total employees
Food and beverage industries	8.8 ₁	33.2 ₁	39.9 ₁	33.9 ₁
Tobacco products industries				
Rubber and plastics products industries	22.9	72.6	72.9	65.7
Leather industries	8.4	20.1	22.3	21.8
Textile industries	12.5	46.7	50.3	39.3
Knitting mills	9.4	18.3	19.8	18.1
Clothing industries	2.8	9.7	10.7	10.0
Wood industries	5.0	25.0	23.0	21.6
Furniture and fixture industries	2.6	16.7	18.1	16.9
Paper and allied industries	32.2	49.2	49.2	48.1
Printing, publishing and allied industries	2.1	11.9	11.6	9.6
Primary metal industries	27.5	45.9	46.6	44.8
Metal fabricating industries (except machinery and transportation equipment industries)	11.3	39.8	39.1	34.4
Machinery industries (except electrical machinery)	31.0	71.6	79.2	72.5
Transportation equipment industries	21.4	86.8	83.0	76.3
Electrical products industries	42.7	64.5	64.5	63.6
Non-metallic mineral products industries	15.8	51.6	51.2	43.8
Petroleum and coal products industries	67.0	97.8	96.4	96.7
Chemical and chemical products industries	46.7 ₁	81.2 ₁	84.3 ₁	76.9 ₁
Miscellaneous manufacturing industries				
All manufacturing industries	11.9	51.9	52.3	44.2
United States-controlled industries	9.1	41.9	42.4	35.6
Other foreign-controlled industries	2.7	10.0	9.8	8.6

¹Confidential.

17.16 Percentage of specified principal statistics accounted for by establishments and ancillary units of foreign-controlled companies, forty leading industries, ranked by value added total activity, 1970 Census of Manufactures

Rank	Code	Industry	Establishments	Value of shipments of goods of own manufacture	Value added total activity	Total employees
1	271	Pulp and paper mills	48.9 ₁	48.5 ₁	47.8 ₁	47.8 ₁
2	323	Motor vehicle manufacturers				
3	291	Iron and steel mills	37.7	14.2	14.5	15.3
4	315	Miscellaneous machinery and equipment manufacturers	34.4	75.4	75.8	72.1
5	295	Smelting and refining	60.0	85.6	87.3	79.0
6	325	Motor vehicle parts and accessories manufacturers	52.1	89.4	87.3	84.1
7	335	Communications equipment manufacturers	39.7	51.1	47.9	47.9
8	2513	Sawmills and planing mills	5.6	29.3	27.7	25.7
9	289	Publishing and printing	1.5	3.2	2.6	2.6
10	286	Commercial printing	2.3	16.5	17.0	15.2
11	104	Dairy products industry	8.7	29.8	36.7	26.1
12	1011	Slaughtering and meat processors	4.1	13.7	16.1	14.6
13	3042	Metal stamping and pressing industry	18.3	59.3	56.9	43.7
14	318	Office and store machinery manufacturers	54.8	93.7	98.2	95.7
15	1089	Miscellaneous food processors, n.e.s.	33.4 ₁	71.9 ₁	78.5 ₁	71.2 ₁
16	3651	Petroleum refining				
17	336	Manufacturers of electrical industrial equipment	54.2	86.7	89.4	87.5
18	321	Aircraft and aircraft parts manufacturers	23.3	87.7	85.4	85.2
19	1093	Breweries				
20	302	Fabricated structural metal industry	8.2	14.5	13.1	13.4
21	374	Manufacturers of pharmaceuticals and medicines	43.4	85.0	86.6	78.5
22	1072	Bakeries	1.6	21.7	22.5	17.1
23	1092	Distilleries				
24	309	Miscellaneous metal fabricating industries	25.8	50.7	55.2	52.3
25	2431	Men's clothing factories	5.4	13.9	15.0	15.4
26	3783	Manufacturers of industrial chemicals (organic), n.e.s.				
27	165	Plastics fabricating industry, n.e.s.	17.8	48.7	49.6	45.8
28	2441	Women's clothing factories	2.4	4.6	5.2	4.8
29	305	Wire and wire products manufacturers	28.0	38.2	46.0	44.1
30	3782	Manufacturers of industrial chemicals (inorganic), n.e.s.	85.1 ₁	87.0 ₁	91.5 ₁	82.4 ₁
31	3799	Miscellaneous chemical industries, n.e.s.				
32	1091	Soft drink manufacturers	11.8	50.9	49.1	41.5
33	1623	Tire and tube manufacturers				
34	274	Miscellaneous paper converters	31.4	60.8	63.1	58.5
35	1031	Fruit and vegetable canners and preservers	24.3	63.9	65.2	61.5
36	153	Tobacco products manufacturers				
37	306	Hardware, tool and cutlery manufacturers,	12.6	45.7	46.0	43.5
38	2619	Household furniture manufacturers, n.e.s.	3.2	9.7	9.7	10.4
39	3911	Instrument and related products manufacturers	39.5 ₁	87.8 ₁	87.7 ₁	85.5 ₁
40	338	Manufacturers of electric wire and cable				

¹Confidential.

17.17 Summary statistics of estates closed during 1972 under the Bankruptcy Act

Item	Province						
		Nfld.	PEI	NS	NB	Que.	Ont.
Bankrupt estates	No.	6	—	13	24	2,301	2,170
Estates closed	\$'000	127	—	252	252	62,839	19,012
Assets as estimated by debtors	"	309	—	698	451	103,933	52,128
Unsecured liabilities as estimated by debtors	"	28	—	153	64	10,975	5,924
Realization by trustee	"	14	—	45	34	5,628	3,282
Costs of administration	%	50	—	34	53	51	55
Costs as percentage of realization	\$'000	14	—	108	30	5,347	2,642
Paid to unsecured creditors	"	48	—	111	187	36,321	12,089
Retained by secured creditors	%	4	—	15	7	5	5
Average percentage recovered by unsecured creditors							
Proposals	No.	2	—	2	—	175	40
Proposals closed	\$'000	134	—	103	—	16,982	21,778
Unsecured liabilities as estimated by debtors	"	35	—	13	—	2,273	3,635
Paid to unsecured creditors							
		Man.	Sask.	Alta.	BC	Total	
Bankrupt estates	No.	94	119	220	231	5,178	
Estates closed	\$'000	2,110	1,322	5,875	8,343	100,132	
Assets as estimated by debtors	"	3,193	3,070	7,076	12,860	183,718	
Unsecured liabilities as estimated by debtors	"	667	329	1,577	1,250	20,967	
Realization by trustee	"	243	143	648	564	10,601	
Costs of administration	%	36	43	41	45	51	
Costs as percentage of realization	\$'000	424	186	929	686	10,366	
Paid to unsecured creditors	"	1,330	775	3,724	6,521	61,106	
Retained by secured creditors	%	13	6	13	5	6	
Average percentage recovered by unsecured creditors							
Proposals	No.	2	4	5	5	235	
Proposals closed	\$'000	23	132	1,709	689	41,550	
Unsecured liabilities as estimated by debtors	"	4	28	437	271	6,696	
Paid to unsecured creditors							

17.18 Estimated liabilities¹ of bankruptcies and insolvencies, 1968-72 (thousand dollars)

Year	Atlantic Provinces	Quebec	Ontario	Prairie Provinces	British Columbia	Total
1968	1,868	89,771	62,883	16,403	9,810	180,735
1969	3,137	118,534	51,078	13,208	25,148	211,105
1970	7,346	138,461	76,967	20,998	13,876	257,648
1971	10,591	121,451	97,533	72,223	20,256	322,054
1972	4,292	101,327	94,096	82,941	24,587	307,243

¹Estimated by debtors and therefore to be accepted with reservations.**17.19 Bankruptcies and insolvencies, by industry and economic area, 1972**

Industry	Atlantic Provinces	Quebec	Ontario	Prairie Provinces	British Columbia	Total	Estimated liabilities \$'000
Primary industries	3	35	66	32	14	150	9,303
Manufacturing	—	105	96	13	12	226	92,463
Foods and beverages	—	7	6	3	—	16	2,209
Textiles	—	7	2	—	—	9	3,613
Clothing	—	19	12	2	—	33	4,797
Wood	—	13	9	2	4	28	15,681
Paper and allied industries	—	31	28	4	2	65	50,650
Primary and fabricated metal, machinery, transportation equipment, electrical products and non-metallic mineral products	—	19	23	2	4	48	10,598
Chemical	—	2	3	—	—	5	460
Other industries	—	7	13	—	2	22	4,455
Construction	8	169	235	59	85	556	61,923
General contractors	5	95	129	37	53	319	47,042
Special trade contractors	3	74	106	22	32	237	14,881
Transportation, communications and other utilities	2	52	104	44	22	224	9,379
Trade	26	574	524	134	89	1,347	73,155
Food	10	123	61	24	8	226	11,581
General merchandise	3	30	38	12	1	84	9,037
Automotive products	3	128	111	38	14	294	11,873
Apparel and shoes	2	111	89	13	15	230	9,795
Hardware	1	15	21	7	3	47	2,794
Household furniture and appliances	2	57	64	13	20	156	7,050
Drugs	2	6	8	—	2	18	4,916
Other trades	3	104	132	27	26	292	16,109
Finance, insurance and real estate	—	26	29	8	13	76	38,864

17.19 Bankruptcies and insolvencies, by industry and economic area, 1972 (concluded)

Industry	Atlantic Provinces	Quebec	Ontario	Prairie Provinces	British Columbia	Total	Esti- mated liabilities \$'000
Service	6	211	177	41	32	467	22,156
Education, health and welfare	—	15	20	7	4	46	4,692
Recreational	—	14	11	1	1	27	1,060
Business	2	21	14	4	3	44	2,772
Personal	4	149	97	23	23	296	11,050
Other	—	12	35	6	1	54	2,582
Total, all industries	45	1,172	1,231	331	267	3,046	307,243

Sources

17.1 - 17.16 Manufacturing and Primary Industries Division, Industry Statistics Branch, Statistics Canada.

17.17 Superintendent of Bankruptcy, Department of Consumer and Corporate Affairs.

17.18 - 17.19 Business Finance Division, General Statistics Branch, Statistics Canada.

Chapter 18

Merchandising and trade

18.1 Merchandising and service industries

This Section deals with the distribution of goods and services which flow from producer to consumer principally through wholesale and retail channels and through service outlets in what is generally known as the marketing process.

Merchandising industries include wholesaling and warehousing (wholesale merchants, agents and brokers, primary products dealers, manufacturing sales branches, petroleum bulk tank plants and truck distributors) and the entire field of retailing including direct selling and automatic vending. Service industries offer a service to consumers, businesses and the professions.

The data on merchandising and service industries are gathered in the course of censuses which are conducted by Statistics Canada every five years, and by means of monthly, annual and occasional surveys. In recent years, a considerable degree of interest has been focused on the service trades, which has resulted in an expanded statistical coverage of that area of activity.

18.1.1 Retail trade

Data for retail trade are collected by Statistics Canada from monthly surveys among all retail chains (four stores in the same kind of business under one owner), and among a sample of independent retailers.

Table 18.1 shows retail trade data from 1970 to 1973 with percentage changes for 1966-69 and 1970-73. During the period 1966-69 retail sales rose from \$22,700 million to \$27,400 million, an increase of 20.8%. This rate of increase almost doubled from 1970 to 1973 when sales increased by 36.4%, from \$28,000 million to \$38,200 million.

The most substantial increase in sales occurred in department stores — by 38.7% from 1966 to 1969 and by 51.0% from 1970 to 1973. In the 1966-69 period, above-average increases were also recorded by general merchandise stores (which include sales through department store mail order catalogues), service stations and garages, women's clothing stores, shoe stores and by the "all other stores" category. From 1970 to 1973 above-average sales increases were recorded by motor vehicle dealers (61.2%), furniture, television and appliance stores (41.0%), and jewellery stores (38.0%). Among the smallest sales increases recorded were those in variety stores, men's clothing stores, family clothing stores, hardware stores and fuel dealers. These categories had below-average sales increases in both time periods. Some store categories recorded a very different sales increase in one period compared with the other. For example, sales in general stores increased by only 1.7% from 1966 to 1969 but by 31.7% from 1970 to 1973; motor vehicle dealers showed sales increases of 10.6% and 61.2%, in the two periods.

On a provincial level, the greatest rates of increase of retail sales from 1966 to 1969 occurred in Alberta and British Columbia. Ontario's was slightly higher than Quebec's from 1966 to 1969 but slightly lower than Quebec's from 1970 to 1973. Saskatchewan, which showed virtually no increase in retail sales from 1966 to 1969, recorded an increase of 43.2% from 1970 to 1973, one of the highest rates of increase in Canada.

While retail sales rose 6% a year from 1966 to 1969, wages, salaries and supplementary income rose 10.5% from 1970 to 1973, when retail sales rose at an annual rate of 11%, wages, salaries and supplementary labour income kept pace, rising at the same rate as retail sales. On the other hand, personal income (which includes not only wages and salaries but income of farm operators, non-farm unincorporated business, interest, dividends and miscellaneous investment income, government transfers to private individuals and military pay and allowances) rose by 10.3% a year from 1966 to 1969, but only by 3.3% yearly from 1970 to 1973.

Chain and independent stores. A retail chain is defined as an organization operating four or more retail stores in the same kind of business under the same legal ownership. All department stores are classified as "chains" even if they do not meet the foregoing definition. An in-

dependent retailer is one who operates one to three stores, even if he is a member of a voluntary group organization.

In some kinds of business such as motor vehicle dealers, service stations and garages, "other food stores" (i.e. excluding grocery and combination stores), and men's clothing stores, independent merchants have maintained a dominant position; in others, such as general merchandise stores and variety stores, chains are dominant. Table 18.2 provides information on the sales trends of chains and independent stores by kind of business in 1970 and 1973 and the percentage change during 1966-69 and 1970-73.

From 1966 to 1969 sales through chain stores rose by 30.3% and through independent stores by 16.1%. From 1970 to 1973 retail sales through both chains and independent stores rose at a greater rate than during the earlier period. Sales through chain stores rose by 42.8%, those through independents by 32.5%.

Grocery and combination store chains continued their sales increases at the expense of independent stores. Although general store chains were less important than independents, from 1970 to 1973 chains made considerably more headway than independents. The dominant chains in the variety stores category showed smaller sales increases than independents. From 1970 to 1973, variety stores were the only category in which the sales increases of the chain segment were less than those of independents. Sales by service station and garage chains are far less than the total sales by independents in this category but a trend to chains seems to be developing. Sales increases of chains compared to those of independents were 50.1% to 22.8% from 1966-69 and 104.1% to 20.6% from 1970-73. Men's clothing store chains account for appreciably fewer sales than independent merchants. Both showed similar sales increases from 1966 to 1969 but from 1970 to 1973 chains recorded sales increases of 49.7% compared with 16.5% for independents. A similar tendency to that of men's clothing stores was observed in shoe store sales. Chains used to account for a smaller proportion of the total but after a sales increase of 31.3% compared with 10.3% for independents, sales through chains are now greater than those made through independent outlets. A similar increase in the strength of chains can be observed in furniture, television and appliance stores, fuel dealers and drug stores. In each case the sales increase through chains compared to that of independents grew much faster in the period 1970-73 than 1966-69.

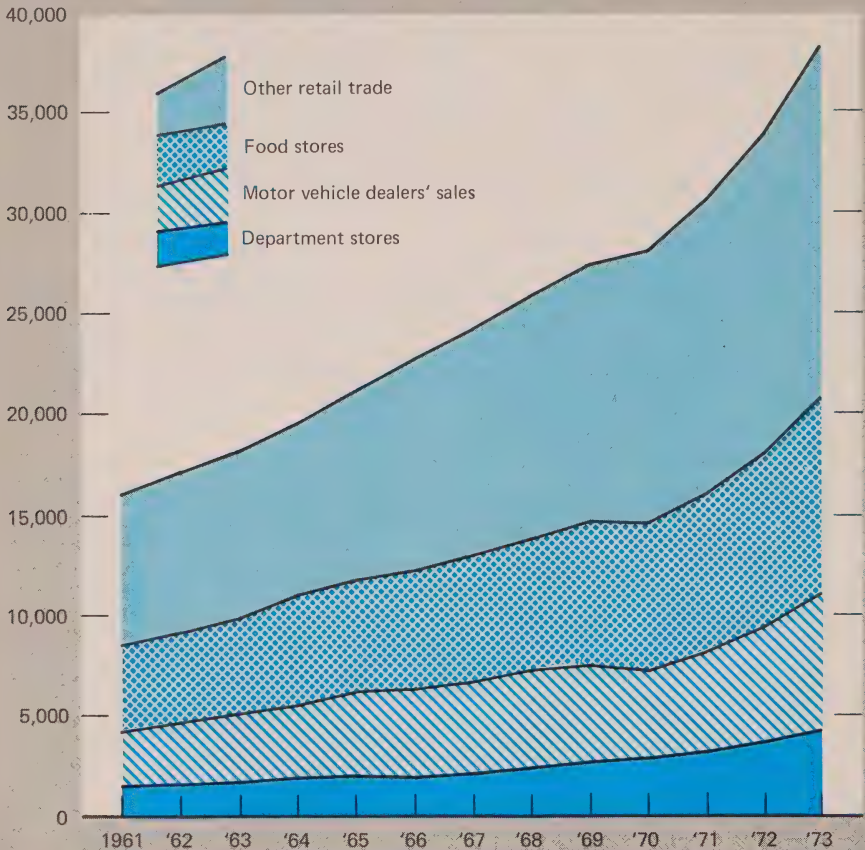
Table 18.3 illustrates the relative importance of chains by kind of business and the trends from 1966 to 1973. The percentages shown in this Table represent the chains' share of the market. The balance is accounted for by the independents, e.g. in 1973 chain stores accounted for 39.6% of the total market, therefore independent stores accounted for 60.4%. Retail sales through chain store outlets in 1966 accounted for 33.0% of all retail sales, while in 1973 the comparable figure was 39.6%. The largest change occurred in grocery and combination stores where chain stores increased their share of the market between 1966 and 1973 from 44.9% to 55.9%, and in women's clothing stores where chains increased their market share from 26.5% in 1966 to 37.8% in 1973. Service station and garage chains almost tripled their share of the total revenue from 3.4% in 1966 to 9.3% in 1973. Only in "all other food stores", motor vehicle dealers, and fuel dealers, did the chains fail to make progress at the expense of independent operators. However, it is important to remember that independent stores still account for over 60% of all retail sales in Canada and that they have yielded their dominant position only recently in shoe stores and in grocery and combination stores.

Department stores. Department stores have shown the most consistent and substantial growth of all categories of retail trade. Sales are exceeded only by grocery and combination stores and by motor vehicle dealers. In 1966 department store sales represented 8.7% of total retail trade; by 1973 they had increased their market share to 11.3% with total sales slightly over \$4,300 million, excluding catalogue sales.

Sales through department stores were 38.7% higher in 1969 than in 1966, and 51.0% higher in 1973 than in 1970. The rate of growth among the various departments within department stores has not been consistent although the nine or 10 departments which dominated sales in 1966 continued to dominate sales in 1973. Above-average increases in both the 1966-69 and 1970-73 periods were recorded for the women's and misses' sportswear department and for men's clothing, both of which are among the largest sections in department stores with sales of over \$200 million each in 1973. Jewellery departments also showed above-average sales increases in both time periods, recording one of the highest increases of any section in this

Retail trade, 1961-73

Millions of dollars



category of stores during 1970-73 (74.2%); only the major appliances section showed a greater increase during that time (84.7%). Other departments which showed above-average sales increases in both time segments are: television, radio and music; housewares and small electrical appliances; sporting goods and luggage; and stationery, books and magazines. Three departments showed particularly substantial increases during 1966-69: women's footwear, men's footwear and hosiery where sales were 75% to 85% higher in 1969 than in 1966. However, all three had lower-than-average sales increases in 1970-73 with hosiery recording the lowest increase of any department, 2.2%.

Voluntary group stores. In a variety of trades, independent retailers have turned increasingly toward affiliation with voluntary group organizations in order to stem the continuing encroachment on their market share by chains and department stores. Through such group affiliation independent stores may enjoy many of the advantages accruing to chain store firms: bulk purchasing, centralized buying, lower unit advertising costs, and a number of important management services. (It should be noted that not only independent stores but some chains are also affiliated in group organizations.) As sponsors and/or suppliers of many voluntary groups, wholesalers have also benefited, particularly through the streamlining of their selling and order-filling systems.

The 1972 survey of voluntary group stores affiliated with food wholesalers revealed that sales of grocery and combination stores affiliated in voluntary groups totalled \$2,420.5 million,

representing 30.7% of all grocery and combination store sales. Unaffiliated chains accounted for \$3,937.9 million, or 49.9% of the total, and unaffiliated independents had sales of \$1,531.7 million, 19.4% of all grocery and combination store sales. Table 18.5 shows that voluntary groups have lost ground to unaffiliated chains and that both affiliated and non-affiliated independent stores have lost ground to chain stores. From 1967 to 1969, affiliated independent stores increased their share of the market which may have been partly due to an increasing number of independent stores joining voluntary groups. However, in 1972 the market share of both affiliated and non-affiliated independent stores declined; in 1969 there were 7,739 independent affiliated stores but in 1972 their number dropped to 7,077.

Shopping centres. The rise of shopping centres probably constitutes the most important recent development in retailing. A shopping centre is defined as a planned development of outlets with a parking lot which offers free parking to patrons. There must be at least five retail stores (including restaurants but not counting other service outlets); one of the stores must be a grocery and combination store, or a department store, or a chain variety store. The definition excludes shopping facilities without a parking area of adequate dimensions, as well as shopping facilities which do not offer free parking. Hence, most downtown malls and many small "strip" developments are excluded.

The first shopping centre in Canada was built in Vancouver in 1950; by 1956, 64 centres had been built and their aggregate sales of about \$236 million represented 1.6% of total retail trade. By 1972 there were 599 shopping centres in operation, with a total of 12,314 retail and service outlets and sales and receipts totalling \$5,693.2 million. Retail stores alone numbered 9,324 with sales of \$5,466.7 million. This represents 16.1% of total retail sales in Canada. Excluding retail outlets which do not normally operate in shopping centres such as general stores, motor vehicle dealers and fuel dealers, sales in shopping centres accounted for 20.4% of all Canadian retailing.

For some kinds of business, shopping centres are particularly important. In 1972, 50.0% of all department store sales were through shopping centres, 36.2% of all women's clothing store, 29.8% of all shoe store, and 22.7% of all grocery and combination store sales were in outlets situated in shopping centres. Department stores have now replaced grocery and combination stores as the shopping centre's biggest earner: in 1972 sales through department stores in shopping centres totalled \$1,844.2 million; those made through grocery and combination stores \$1,793.0 million (see Table 18.6). From 1970 to 1972, department store sales in Canada increased by \$835.6 million; of this increase 75.5% or \$630.9 million was in shopping centres. At the same time, grocery and combination stores recorded sales increases of \$1,040.9 million; 46.4% of that, or \$483.5 million was in shopping centres.

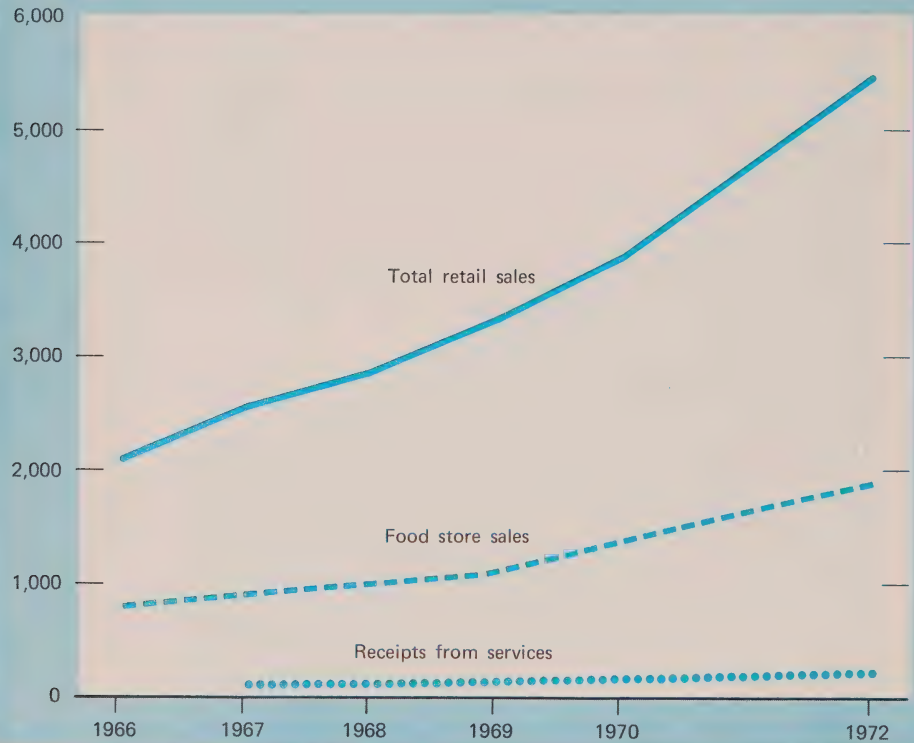
Shopping centres are, principally, an urban development: the nine largest cities in Canada have two thirds of all shopping centre outlets, sales and receipts. Also, shopping centres attract corporate chain outlets rather than independent retailers: in 1969, independent retailers in shopping centres reached an all-time high share of retail sales of 19.9%. By 1972, that share had decreased to 16.4%. At the same time, while shopping centre sales accounted for 20.4% of all retail sales in Canada, they accounted for 35.4% of all chain and department store sales, and for 29.7% of all chain store sales in the country. Data for retail stores and service outlets in shopping centres of varying size are given in Table 18.7.

Retail sales in shopping centres more than doubled from 1967 to 1972, rising by 114.2%. Similarly, receipts from services rose by 102.5%. During the same period, total retail sales in Canada increased by 40.5%.

New motor vehicle sales. The largest homogeneous group of commodities sold within the confines of retail trade outlets is embodied in the classification "new motor vehicles". It is the only survey of retail trade carried out at the "commodity" level; all others are based on "kind of business". New motor vehicles include passenger cars, trucks and buses. "Passenger cars" include not only private cars, but taxis and other passenger cars used for business and commercial purposes; "commercial vehicles" include all trucks, even if used for private purposes such as camping. All export sales, domestic sales of motorcycles, snowmobiles, and other all-terrain vehicles are excluded. Data published by different sources may vary for several reasons. For example, one source may exclude motor vehicles used by the Canadian Armed Forces, another may classify "demonstrators" as being "used" cars when sold; some sources classify vehicles imported in semi-finished state as "parts", etc. Also, "factory shipments",

Retail sales and receipts from services in shopping centres

Millions of dollars



“sales” and “registrations” are all different concepts so that it is difficult to provide simple and unequivocal figures for this industry. Statistics Canada obtains new motor vehicle sales data directly from the manufacturers and importers, most of which add their “house-sales” to the sales reported to their dealer organization and a few small importers supply shipment data instead.

In 1973 sales of new motor vehicles rose to new record levels of 1,226,698 units valued at \$5,370.4 million (Table 18.9). These figures represent an advance of 15.1% over 1972 in units and 24.5% in dollars. Passenger car sales totalled 970,828 units, of which 782,914 were Canadian or US manufactured and 187,914 were overseas imports. Canada imported 111,467 cars from Japan and 76,447 from Europe. Commercial vehicle sales amounted to 255,870 units of which 235,449 were of Canadian or US manufacture and 20,421 were overseas imports (Table 18.10).

Campus book stores. Retail trade statistics are collected annually from book stores located on the campuses of universities and other post-secondary educational institutions. Owing to their location and the highly seasonal nature of their business, campus book stores are not included in the census of merchandising and services. However, since they constitute a retailing activity, data on their operation is included here. In the 1972-73 academic year 199 campus book stores had net sales of \$44.1 million, a 7.8% increase over the previous academic year. Of the total dollar sales, 66.1% was accounted for by textbooks, 11.6% by trade books, 14.2% by stationery and supplies and 8.1% by sale of miscellaneous items.

Vending machine sales. A vending machine is a device which dispenses merchandise after a requisite amount of money is inserted in it. The merchandise includes food, beverage and

tobacco as well as non-food products. Not included in this concept are newspaper and gasoline venders as well as machines which dispense "services" such as amusements, laundromats, music, photographs, shoe shines, etc. To be included in the survey a vending machine operator must operate at least 10 full-size vending machines or report sales of at least \$20,000.

In 1972, 692 firms operated 105,588 machines with sales totalling \$178.9 million including 30,824 "bulk confectionery" machines with sales of \$1.6 million. Hence, in 1972, 74,764 full-size machines were in operation by vending machine operators with sales totalling \$177.3 million. From 1961 to 1966 sales rose at the rate of 19.1% per year; from 1967 to 1972 sales rose at a rate of 8.4% per year. Of the total sales volume of \$178.9 million, \$87.4 million, or 48.9% was in tobacco products; \$28.2 million (15.8%) in hot beverages such as coffee, tea or soups in cups; \$15.1 million (8.4%) in cold drinks dispensed in disposable cups; and \$14.0 million (7.8%) in cold drinks vended in bottles, cans or cartons.

Of all 74,764 full-size machines, 36.4% were placed in industrial plants; 22.2% in hotels, motels, restaurants and taverns; 14.3% in institutions, hospitals, universities, schools, etc.; 6.9% in business offices; 6.4% in gasoline stations; 6.1% in other retail and service outlets; 4.6% in amusement and recreation centres such as theatres, bowling alleys, etc.; and 3.2% in other locations. In Canada a total of 24,547 machines were sold in 1972 for \$14.1 million, of which 22,125 were full-size machines for a value of \$13.9 million; the difference is accounted for by bulk confectionery machines. Of the machines which commenced operation in Canada for the first time in 1972, about 10,000 were beverage vending machines, nearly 6,000 were cigarette vending machines, over 4,000 were non-food vending machines, and about 2,000 were confection and food venders.

Direct selling refers to the substantial volume of consumer goods sold directly to the final consumer for personal use through channels of distribution which bypass retail stores. The direct transfer of goods may be effected at any level, from the primary producer, manufacturer, importer, wholesaler or specialized direct seller. Among those engaged in direct selling may be, at the agricultural level, greenhouse and nursery operators and market gardeners and, at the manufacturing stage, integrated sales divisions using mail order or door-to-door canvassers. Figures on department store mail order catalogue sales are not included under "direct selling" but under "general merchandise stores". On the other hand, domestic fuel, which is distributed door to door is counted under "retail" rather than under "direct selling".

During 1972, Canadian householders spent \$928.0 million on goods purchased directly through channels other than retail outlets (Table 18.11); \$604.1 million worth of goods (65.1%) was bought in the home from door-to-door canvassers and home delivery tradesmen; \$140.7 million (15.2%) was spent on mail order purchases (other than from department store catalogues); \$165.8 million (17.8%) was spent in showrooms and premises of manufacturers; \$17.5 million (1.9%) was purchased through greenhouses, market gardeners, roadside stands, newspaper "honour boxes", and exhibitions and shows. From 1966 to 1972 direct selling grew by 34.2%. During the same period, retail sales (through regular outlets) rose by 49.6%. One of the reasons for the relatively slow rise of direct selling was the decline of door-to-door selling of dairy products and bakery goods, both of which still account for a quarter of all direct sales; in 1966 they had accounted for well over one third of all direct sales. Most other categories showed substantial increases.

In 1972, \$33,929.7 million was spent by consumers in retail outlets (including fuel dealers and department store mail order catalogue purchases); \$928.0 million was spent on mail order goods, or purchased through door-to-door operations, from manufacturers' sales offices, showrooms, exhibitions, market stalls and the like; \$105.6 million was bought through vending machines, and \$44.1 million was spent in campus book stores. In total, consumers spent over \$35,000 million in 1972 in regular retail outlets and through channels ancillary to the retailing industry.

18.1.2 Sales financing and consumer credit

Ancillary to the retailing industry are the financial services which facilitate consumer spending. Sales finance companies extend credit not only for consumer goods but for industrial and commercial goods as well. These firms include independent sales finance companies, the sales finance company subsidiaries of car, truck and farm implement manufacturers, and those consumer loan companies which also finance conditional sales contracts.

At the end of 1973, total balances of "retail sales paper" outstanding on the books of sales finance companies reached a new record of \$2,679.7 million, an increase of 20.2% over the 1972 total of \$2,228.4 million. Of the total balances outstanding at year-end 1973, \$1,528.9 million was for commercial and industrial goods and \$1,150.8 million for consumer goods.

New paper purchased by sales finance companies in 1973 totalled \$2,463.1 million, of which \$1,383.0 million was for commercial and industrial goods, and \$1,080.1 million for consumer goods. From 1972 to 1973, the extent of financing of commercial goods was greater than that of consumer goods; total paper purchased rose by 22.1%, for consumer goods by 14.8%, and for commercial and industrial goods by 28.5%.

Although declining in importance, the most important commodity financed through sales finance companies is still new passenger cars. From 1970 to 1973, balances outstanding for passenger cars of consumers declined from 34.3% to 29.6% of total outstanding balances, while balances outstanding for commercial vehicles (including passenger cars for commercial purposes) increased from 27.0% to 36.5%.

Consumer credit arises through an advance of cash, the advance of goods and services, or through the use of credit cards, in exchange for a promise to pay at a later date — generally by instalments which include interest and finance charges. Instalment financing by acceptance companies which are subsidiaries of, or associated with, large retail organizations are included but fully secured loans and long-term indebtedness, such as residential mortgages and home improvement loans are excluded.

Table 18.12 shows the trends for various kinds of lending institutions with regard to outstanding balances of consumer loans and of the financing of consumer purchases. From 1966 to 1969 total balances outstanding for consumer loans rose by 43.2%; from 1970 to 1973, they rose by 50.3%. By comparison, consumer purchases in retail stores in the two equivalent periods rose by 20.8% and 36.4%, and the consumer price index increased by 12.7% and 16.0%, respectively.

Different lending institutions performed at greatly different rates of change. The outstanding balances of consumer loans of sales finance and consumer loan companies actually declined from 1966 to 1973. The same applies to companies lending money under the Small Loans Act (lending sums of less than \$1,500). Other lending institutions showed relatively small increases from 1966 to 1973 such as furniture, television, radio and appliance stores (13.0%), "other" retailers (44.8%), department stores (57.5%), public utility companies (80.8%) and life insurance company policy loans (92.7%). The largest increases in outstanding balances were recorded by consumer loan companies lending over \$1,500 (223%), chartered banks (261%), "other" credit card issuers (183%), and credit unions (158%).

18.1.3 Service trades

Service trades generally encompass those businesses which perform a service and in which the sale of goods constitutes only a minor function. Service trades are classified generally into six principal groups: amusement and recreational services (movie theatres, bowling alleys, billiard parlours, health clubs, etc.); personal services (barber shops, beauty parlours, laundry and dry cleaning, laundromats and shoe repair shops); restaurant services (restaurants, take-out food shops, and other eating and drinking places); miscellaneous services including photographers, automobile and truck rentals and driving schools; services to business such as lawyers, accountants, computer services, consultants, advertising agencies, and media representatives; accommodation services which include hotels, motels and tourist camps. Not included under service trades are educational services, health services, real estate operations and financial services. It should also be noted that automotive services such as garages and other repair shops are covered under retailing.

Traveller accommodation. Table 18.13 summarizes the major types of accommodation in 1970. Total accommodation receipts in 1970 were \$1,380.0 million, of which hotels accounted for the major share, 81.8%, with total receipts of \$1,128.4 million. It should be noted that the accommodation group is so large and diverse that not all units could be covered in the survey, but the foregoing data represent a very high proportion of the total tourist accommodation facilities.

A provincial breakdown for tourist accommodation is provided in Table 18.14. The share of the accommodation dollar of eastern Canada, i.e. Ontario, Quebec and the Atlantic Provinces, is relatively low compared with that of the West — 59.8% to 39.8% — in the light of

a population ratio of 72.9% to 27.1%, and the fact that eastern Canada accounts for the largest tourist and convention centres. Particularly interesting is the relatively high share of the Canadian accommodation revenue attained by Manitoba and Saskatchewan — 6.7% and 5.2% respectively — compared with population ratios of 4.5% and 4.1% of Canada, and retail sales of 4.3% and 3.8%. A partial explanation for this may be that in these two provinces alcoholic beverage sales in hotels and other types of tourist services account for a relatively high proportion of the total expenditure on accommodation services. The sale of alcoholic beverages in hotels in these two provinces makes up over 58% of their total revenue from accommodation. In all other provinces, alcoholic beverage sales are relatively less important: e.g. in Quebec the sale of alcoholic beverages in tourist accommodation facilities accounts for about 38% of total revenue, and in Ontario 32.5% of receipts by traveller accommodation facilities.

Restaurants. Data for restaurants are collected from a sample of independent restaurant operators and from a full coverage survey of chain restaurants. Independent restaurants which hold a franchise are classed as independents. Restaurants in hotels are, generally, excluded from restaurant statistics and included with hotels.

Receipts in the 1966-69 period rose 11.1% while the comparable increase from 1970 to 1973 was 28.1%. These rates of increase are somewhat below the increases in retail sales which, for comparable time spans, were 20.8% and 36.4%, respectively. The value of restaurant receipts was \$1,561.4 million in 1973 and \$1,386.6 million in 1972 (see Table 18.15 for the provincial breakdown). Chains accounted for 10.6% of the hotel revenue of restaurants in Canada.

Franchising in the food-serving industry. Franchising is a system of distribution in which one enterprise grants to another the right to merchandise a product or service. A pilot survey revealed 22 franchisers operating in Canada's food-serving industry, covering 1,448 outlets operated by franchisees with sales of \$203.5 million in 1971. This suggests that 15.8% of revenue from all restaurants in 1971 was accounted for by franchisers, (or 17.6% of revenue from independent restaurant operators).

Power laundries, dry-cleaning and dyeing plants. In 1972 a total of 2,450 power laundries, dry-cleaning and dyeing plants operated in Canada with a revenue of \$258 million. This revenue is lower than in any year since 1967. Of these plants, 336 were power laundries, with a revenue of \$114 million, and 2,114 were dry-cleaning and dyeing plants with receipts totalling \$144 million. Power laundries maintained their revenues in the past few years and in 1972 showed a slight increase over the previous year, but the revenue of dry-cleaning and dyeing plants has been decreasing.

Motion picture distribution and production. This industry consists of exhibitors who operate regular movie theatres and drive-in theatres, film distributors, and private firms and government agencies engaged in the production of motion picture films.

Total receipts from admissions in 1972 were \$140.4 million, of which \$122.5 million were obtained by regular theatres and \$17.9 million by drive-in theatres. There were 1,128 regular theatres and 284 drive-in theatres in operation in Canada.

The average admission price was \$1.62 in regular theatres (ranging from a low of \$1.04 in Nova Scotia to \$1.75 in Ontario) and in drive-in theatres it was \$1.69. The per capita expenditure reached a high of \$8.30 in 1953, then gradually declined to a low of \$3.91 in 1962, increasing gradually to reach its present level of \$6.89.

The number of paid admissions in regular motion picture theatres reached a high in 1952, then declined gradually until 1963; after an increase in 1964, admissions continued to decline again until 1970, but in 1972 another slight increase was recorded (see Table 18.16). The trend of paid admissions in drive-in theatres was somewhat different. These reached a high in 1954, after which they declined quite rapidly for a couple of years. From 1957 to 1965 the number of admissions fluctuated around the 10 million mark. Ticket sales increased after that, reaching 12.3 million in 1968. After 1968, the number of admissions declined again. The number of admissions to both kinds of theatre has not kept pace with the rising population, and, at the present time, seems to have stabilized at around 90 million a year. In 1972 the average utilized seating capacity was computed to have been only 15% in Canada as a whole. Smaller centres have higher capacity utilization than larger centres.

In 1972, 63 firms distributed films through 121 offices in Canada. Total receipts increased

by 8.2% to \$71.6 million in 1972 from \$66.1 million in 1970. Revenue from the rental of films for theatrical use amounted to \$49.8 million, representing 70% of total receipts. Revenue from the rental of films for television accounted for 25%. The remaining 5% came from the rental of film for other uses. In 1972, 801 new films were distributed, compared with 948 in 1970. New feature films numbered 719 and included 404 English, 212 French, and 103 films in other languages. Of the 719 new feature films, 294 came from the US, 134 from France, 116 from Italy, 71 from Britain, 35 from Canada and 69 from other countries.

Motion picture production in 1972 was undertaken by 150 private firms reporting a gross revenue of \$22.9 million. A total of 5,823 original motion picture films were reported by private firms (5,542) and government agencies (281); of these, 2,226 were motion picture and television commercials. In total, 3,038 television and theatrical motion pictures other than commercials were produced — 330 for theatre showing and 2,708 for television. The remaining 559 films were for instruction, training, tourism and information.

Advertising agencies. In 1972, 189 advertising agencies reported gross billings of \$535.1 million (Table 18.17). This does not represent the total expenditure on advertising in the country since much advertising is not produced or placed by and through advertising agencies. Among the expenditures not generally channelled through advertising agencies are classified advertisements in newspapers, and a certain amount of catalogue and direct mail advertising. Of the total gross billings, \$172.0 million was in print media (newspapers, weekend roto magazines, consumer magazines, trade papers, yellow pages, farm publications, etc.), \$171.4 million in television, \$58.4 million in radio, \$13.5 million for outdoor and transportation, \$20.8 million for direct mail and \$2.9 million for other media.

Total media billings amounted to \$415.3 million, production charges accounted for another \$108.0 million and \$11.9 million was for market research surveys and other services. From 1969 to 1972 gross billings increased by 17.3%. Total advertising billings, which comprise the expenditure on time and space as well as production costs, increased by 16.2%; total media billings, i.e. expenditure on space and time alone, increased by 14.0%; production costs by 25.5%; and expenditures on market research surveys and other expenditures more than doubled, increasing by 104.2%. During this time, the share of total media billings of print media dropped from 43.6% to 41.7%, while that of television increased from 37.9% to 41.3%; radio declined from 15.1% to 14.1% and outdoor media almost maintained their share showing a decline from 3.4% to 3.2%.

Computer service industry. In 1972 a pilot survey of the computer service industry revealed that 309 companies in Canada provided computer services involving 661 computers of various capacities, 637 terminals and 1,445 access ports. Total operating revenue amounted to almost \$535 million of which "hardware" sales and rentals accounted for \$370 million, processing for \$119 million, "software" for \$27.5 million and equipment maintenance, education and other services for \$18.6 million.

Of the total operating revenue, \$106 million or 19.8% was generated from computer services provided to financial institutions, \$76 million or 14.2% from manufacturing firms, \$75 million or 14.1% for wholesalers and retailers and \$69 million or 12.9% for federal government agencies. A variety of other businesses and institutions account for the remainder.

18.1.4 Wholesale trade

Wholesalers are primarily engaged in buying merchandise for resale to retailers; to industrial, commercial, institutional and professional users; or to other wholesalers. They also act as agents in connection with such transactions. Firms engaged both in wholesaling and retailing and other mixed-activity businesses are considered to be primarily in wholesale trade whenever they derive a larger gross margin (the difference between the total sales and the cost of goods sold) from wholesale than from any other activity.

Wholesale statistics measure the total volume of Canadian wholesale trade, i.e. the aggregate business conducted by all wholesalers operating in Canada, whether Canadian or foreign and whether sales are domestic or abroad. The total volume of trade measured by statistics is not identical with the value of goods passing through the wholesale sector of the economy; at times wholesale firms sell to each other and thus the value of the same merchandise may be recorded twice or more in the total volume of wholesale trade. No attempt has been made to eliminate such duplications.

According to certain common characteristics each wholesale establishment and location (wholesale outlet) is assigned to one of the following types of operation: primary product dealers (grain, livestock, raw furs, fish, leaf tobacco, pulpwood, etc., including co-operative marketing associations); wholesale merchants (buying and selling goods on own account); agents and brokers (buying and selling goods for others on a commission basis); manufacturers' sales branches (wholesale businesses owned by manufacturing firms for marketing their own products); or petroleum bulk tank plants and truck distributors (wholesale distribution of petroleum products).

In 1966, wholesale merchants accounted for 60.7% of the total sales and revenue of all types of wholesaling operations. From 1966 to 1969, sales of wholesale merchants increased by 18.8% and from 1970 to 1973, by 47.9%. The volume of consumer goods trades rose, from 1966 to 1969, by 28.3%, and for industrial goods trades by 10.7%; from 1970 to 1973 consumer goods trades rose much less sharply than industrial goods trades: 35.1% compared with 61.6%. In spite of the slower growth of consumer goods trades in the recent time segment, the share of sales of industrial goods trades declined between 1966 and 1973 from 54.1% to 52.7%, while that of consumer goods wholesale merchants rose correspondingly from 45.9% to 47.3%. Data for 1970-73 are given in Table 18.18.

Farm implement and equipment sales. Data are collected annually from manufacturers and importers active in the farm implement and equipment field. Dollar sales are reported at dealers' buying price before cash discounts; value of trade-ins are not taken into account; export sales are excluded. The value of attachments sold with the machine is included unless such attachments are sold as separate items or are reported separately. The value of repair parts is excluded from Table 18.19 but their dollar value has been rising more or less steadily from \$62 million in 1966 to \$88 million in 1972.

Farm equipment sales reached a low point in 1970. During 1969 and 1971 sales were a little higher but the market did not fully recover to near 1966 levels until 1972. The two most important products were tractors and engines with a sales volume of \$162.7 million, representing 38.9% of the total sales volume of \$420.2 million, and harvesting machinery with sales of \$78.2 million or 18.6% of all farm implement and equipment sales in 1972.

Construction machinery and equipment sales include sales by Canadian distributors, direct sales by manufacturers to end-users (at actual final selling price) and revenue derived from the renting of equipment to users. In 1972 new machinery entering the market (by outright sale, first lease or rental) was valued at \$811.4 million, 2.3% above 1971. The sale of used machinery rose by 26.1% from \$102.9 million in 1971 to \$129.8 million in 1972. Rental income increased 16.4% from \$69.7 million to \$81.1 million. Of the \$811.4 million, \$284.3 million was accounted for by repair and consumable parts. The largest single item in terms of dollar sales was crawler-type tractors: 2,502 units entered the market for a value totalling \$127.8 million. Wheel-type front-end loaders accounted for \$93.8 million (1,657 units). Both these showed sharp increases in sales from 1971, as did excavator cranes with a sales volume of \$75.8 million. Sales of new equipment by distributors totalled \$724.6 million, while sales by manufacturers amounted to \$86.9 million.

Diesel and natural gas engine sales. In 1972, 16,829 diesel engine units were sold in Canada for a total of \$124.1 million and 6,330 engine units were exported or re-exported with a value of \$43.5 million. One quarter of the units sold in Canada were in the 201-300-hp range and another 24% were in the 101-200-hp range. In addition, 882 natural gas engines were sold in Canada for a value of \$16.4 million.

18.1.5 Co-operatives

An increase of \$410 million or 17% in gross business volume was recorded by Canadian co-operatives in 1972. Wheat exports contributed the major share of the increase as a result of heavier volume and higher prices but most other farm commodity prices were also higher in line with world conditions of production deficits in various countries. Total business volume of the co-operatives came to \$2,792 million for the year and consisted of: farm product marketings \$1,786 million, an increase of \$314 million or 21%; sales of merchandise and supplies \$913 million, \$88 million or 11% more; revenue from services (trucking, cold storage, seed cleaning, etc.) \$72 million, an increase of \$5 million or 7%; and miscellaneous income (rent, interest, dividends, etc.) \$20 million, a gain of \$3 million or 17%.

Co-operatives covered here exclude recreational (community halls and rinks, etc.), financial (credit unions) and those for native peoples. Those included are classified by their primary function into four main groups: marketing and purchasing (the largest), service, fishermen's and wholesale. The first three groups are known as "local" co-operatives since they deal directly with individual members; the wholesale co-operatives perform wholesaling functions for the locals. Assets of the locals at year-end came to \$1,334 million representing an annual gain of about 5%. The actual asset expansion was at a rate of 9% but this was partly offset by the exclusion of a large investment-type co-operative in British Columbia which was reclassified as a financial co-operative. The number of co-operatives dropped rather sharply in 1972 as a result of a combination of dissolutions and amalgamations in Alberta, Saskatchewan and Quebec. Co-operative membership edged up slightly to 1,774,000.

It was a record-breaking year for the marketing and purchasing co-operatives in 1972 with all provinces contributing to the gain (see Table 18.20). Total business volume rose to \$2,670 million, an increase of almost 18% over the previous year. Fruits and vegetables, and feed were the only items not showing any appreciable gain for the period. Additions of \$105 million were made to marketing and purchasing assets and about one third of this went into property and equipment, most of it in the Prairie Provinces. The number of marketing and purchasing associations dropped while membership rose by about 15,000, mostly in Alberta and British Columbia. Farm product marketings by marketing and purchasing co-operatives rose significantly in 1972 for an outstanding gain of \$305 million or 22% (Table 18.21). Grain marketings accounted for two thirds of the increase due to strong demand from the export market. Dairy marketing co-operatives also experienced a good year featuring a gain of nearly 16% despite the fact that milk production in Canada remained the same in recent years. Although almost half the increase in returns from dairy co-operatives is due to higher prices, the remainder signified an increased share of the market by co-operatives, much of it through diversification into milk-base food products and the fluid milk market. Fruit and vegetable volume was almost unchanged from the previous year with some crop losses in British Columbia offsetting generally good crops in eastern Canada. Livestock marketings rose but the increased return was due more to higher prices than to higher volume. Poultry and egg marketings by co-operatives were generally higher and miscellaneous marketings climbed about 20% on stronger performances by honey, maple products, tobacco and wool. Marketing and purchasing co-operatives achieved another good year of supply sales reflecting for the most part a year of rising farm incomes. The increase was \$87 million or about 11% and the upward trend was evident in all regions. Food sales rose at a higher than expected rate due to a significant co-operative breakthrough in the urban areas of Alberta. Fertilizer volume rose significantly as farmers expanded production. Sales of farm machinery increased especially in the Prairie Provinces with availability of supply about the only limitation on volume. Feed sales levelled off with good home-grown crops in Ontario while most other merchandise categories rose along with the general improvement in business conditions.

Service co-operatives experienced a moderate increase of 4.5% in business revenues for 1972. The gross was \$84.5 million and was made up of service revenue \$37.3 million, marketing of farm products and sale of supplies \$44.7 million and miscellaneous income \$2.4 million. Livestock marketings by feeder co-operatives in Saskatchewan accounted for a large part of the increase in business volume. Nova Scotia feeder co-operatives operating on a much smaller scale registered a proportionate increase in livestock volume. New Brunswick service co-operatives made a good over-all gain in business volume of about 25%. Medical insurance volume recorded significant gains in British Columbia mainly due to the rapid growth in dental insurance plans introduced recently by the province's large insurance co-operative. Lumber sales by Quebec wood-cutting co-operatives eased slightly during the year. Assets of the service co-operatives totalled only \$148 million at year-end, a drop of some \$36 million primarily due to the previously mentioned reclassification of a large investment type co-operative. Membership in service co-operatives stood at 275,000 while the number of associations came to 1,019. Fishing co-operatives as a group featured a gain in volume of 18% to reach the \$40 million level. British Columbia recorded a notable gain of 44% based on a combination of a larger catch, heavy inventory carryover from the previous year and rising world prices and demand. Most of the other provinces also enjoyed increased returns with higher prices and in most cases higher production. Over-all membership and number of fishing co-operatives were

little changed in the year at 8,000 and 69, respectively, while assets rose about 5% to \$20.6 million.

Sales volume of the wholesale co-operatives reflected the general upswing in economic activity by achieving a gain of \$124 million or 17% for a total of \$838 million. Supply volume was up in all merchandise categories for a composite increase of almost 20% while marketings, despite declines in fruit and vegetables, grains and seeds, recorded a 13% expansion. Hardware and machinery, and building materials led the accelerated growth rate of supply sales for 1972 reflecting further capital investment and consumer durables purchases which had lagged in the years of depressed farm incomes. Fertilizer sales also rose in a second straight year of increased plantings while food products, petroleum, and clothing and home furnishings featured gains of more than 10%. In the marketing sector livestock business volume rose substantially aided by rising prices. Dairy marketings rose about 11% in step with the general rise in dairy incomes. Poultry revenues registered an increase of 25% in contrast to a mediocre performance in the previous year and reflecting better prices and more stable conditions in the industry generally. Assets of the wholesale co-operatives grew at a rate of 7% during the year to \$255 million.

18.1.6 Control and sale of alcoholic beverages

The retail sale of alcoholic beverages in Canada is controlled by provincial and territorial government liquor control authorities. Alcoholic beverages are sold directly by most of these liquor control authorities to the consumer or to licensees for resale. However, in some provinces, beer and wine are sold directly by breweries and wineries to consumers or to licensees for resale. During the year ended March 31, 1973, provincial government liquor authorities operated 1,361 retail stores and had 310 agencies in smaller centres of population.

Table 18.22 shows the value and volume of sales of alcoholic beverages in the years ended March 31, 1967 and 1973. It should be noted that the value does not always represent the final retail selling price of alcoholic beverages to the consumer because, when sold to licensees, only the selling price to licensees is known. Volume of sales is a more realistic indicator of trends in consumption although, as a measure of personal consumption by Canadians, it is subject to the same limitations as the figures of value sales and includes, in addition, purchases by non-residents.

Government revenue specifically related to alcoholic beverages, and details of sales by value and volume for each province are given in Table 18.23. A Statistics Canada publication, *The report and sale of alcoholic beverages in Canada* (Catalogue No. 63-202) shows further detail as well as volume figures of production and warehousing transactions, the value and volume of imports and exports and the assets and liabilities of provincial liquor commissions.

18.2 International trade

Canadian foreign trade statistics are compiled from information recorded on customs documents received by Statistics Canada from customs ports, supplemented with energy data obtained through other channels. Trade figures reflect the physical movements of goods across Canada's national and customs boundaries but do not always represent the financial transactions for changes in ownership of these goods.

Coverage. Total Canadian exports are the sum of domestic exports and re-exports. Domestic exports include shipments abroad of goods wholly produced in Canada together with exports of previously imported goods which have been changed in form by further processing in Canada. Re-exports or exports of foreign produce include only goods previously included in import statistics which are exported from Canada in the same form as when imported. Minor operations such as cleaning, sorting and repacking are not considered as changing the condition of imported goods. Since the introduction in January 1964 of the "General trade" system of compilation, re-exports have also included outward movements of goods previously imported but stored in customs warehouses.

Imports, as from January 1964, include all goods cleared by customs immediately on arrival in Canada together with goods that are entered into customs warehouses. For earlier years, imports under the "Special trade" system of presentation included goods cleared immediately on arrival plus goods cleared for consumption out of customs warehouses. This meant that those goods which crossed the national boundary into and out of customs warehouses without crossing the customs boundary were excluded.

Since January 1960 certain commodities have been excluded from both export and import trade statistics but have been published monthly under "Special transactions — non-trade". This category includes commodity movements which either have no international financial implications or are better considered as non-merchandise transactions in the statistics of Canada's balance of international payments. These are: unrefined gold, gold products where the gold content is 80% or more of the total value, and gold coin, except collections; settlers' effects; private donations and gifts; tourist purchases; goods shipped back and forth across the national boundary by the diplomatic and military personnel of Canada and of foreign countries posted abroad and in Canada, respectively; temporary movements for exhibition or competition, including films for processing; bunker supplies and stores sold to foreign vessels or aircraft in Canada or purchased by Canadian carriers abroad; military grants to NATO member countries; ships of British construction and registry imported for use in Canada, and ships purchased for use as international carriers but not used to carry goods between points in Canada; and generally, all temporary exports and imports and goods merely moving in transit through Canadian territory.

The series "Gold production available for export", which is an item of non-merchandise transactions in the current account of the Canadian balance of international payments, is covered in Chapter 21.

Valuation. Export documents define the valuation to be used as f.o.b. (free on board) place of lading, i.e. point of production for the majority of commodities, Vancouver and St. Lawrence ports for grain and oil seeds and the latter for iron ore. The value of goods imported is usually the value as determined for customs purposes based on the fair market value or the selling price, whichever is higher. For entries exceeding \$50,000 in value, however, the selling price is, with certain exceptions, compiled. In the majority of cases, import documents define the valuation to be used as f.o.b. points of shipment in the country of export; however, where importers report c.i.f. (cost, insurance, freight), care is taken to compile f.o.b. values.

Classification. Beginning with statistics for January 1961 and January 1964, detailed commodity statistics for exports and imports, respectively, have been compiled according to revised classifications, on the basis of the Standard Commodity Classification developed by Statistics Canada as a tool for integrating statistical series derived from different sources. The revised classifications place commodities in sections mainly according to stage of processing and purpose, as follows: Live animals; Foods, feed, beverages and tobacco; Crude materials, inedible; Fabricated materials, inedible; End products, inedible; and Special transactions trade. Previously, commodities were classified primarily according to the material of which they were chiefly composed.

Trade is classified to countries on the basis of consignment. Exports are considered to be consigned to the country to which they are shipped when they leave Canada, i.e. the farthest known destination. Imports are classified to the country from which goods are shipped to Canada, except for goods produced in Central or South America but consigned to Canada from the United States; these goods are credited to the country of origin.

Statistics are compiled and presented for some 150 individual countries, arranged primarily according to geographical location, but also grouped because of common political heritage and tariff arrangements, such as Commonwealth and preferential countries, and of economic links, such as the European Economic Community.

Discrepancies in trade statistics between Canada and other countries. Canada's statistics of exports are rarely in exact agreement with the import statistics of its customers and parallel differences occur with Canadian imports. Major factors contributing to these discrepancies include: differences in the system of valuation used by Canada and those of other countries, with respect to the treatment of transportation charges, fair market and transaction values; differences in the statistical treatment of special categories of trade, such as military supplies, government-financed gifts of commodities, postal and express shipments, tourist purchases, bunker and warehouse trade; differing definitions of territorial areas; differing systems of crediting trade by countries, notably the consignment system used by Canada and the actual origin or ultimate destination system in use in some other countries; and differences in the time at which trade is recorded in the statistics of partner countries caused by the time required for goods to move from one country to another.

Table 18.24 summarizes total international trade for selected years 1956-73. In 1956 Canada's imports exceeded exports by \$713 million. The deficit persisted until 1960. Since then, a favourable balance of trade has been maintained although with some fluctuation from year to year. The excess of exports over imports reached a high of \$2,868 million in 1970, and declined to a low of \$1,471 million in 1972, subsequently reaching \$1,998 million in 1973.

18.2.1 Geographic regions

Table 18.25 shows the importance to the Canadian economy of trade with the US. Exports to that country in 1961 made up 54% of the total, to the UK 15.8%, to other Commonwealth and preferential countries 5.7%, and to all other countries 24.5%. By 1973 exports to the US had increased by 13.2 percentage points, while those to the UK decreased by 9.4 percentage points and to other Commonwealth and all other countries by 2.2 and 1.6 points, respectively. The proportion of Canadian imports from the US increased from 67% to 70.8% over the 12-year period and from 17.2% to 20.7% for "other countries" while easing to 4.3% and 4.2% for the United Kingdom and other Commonwealth countries.

Values of total exports and imports, by geographic region and country for 1971-73, are shown in Table 18.26. Over this period the United States, United Kingdom, Japan and the Federal Republic of Germany were Canada's main trading partners. In 1973 exports to Italy rose to fifth place from eighth, while those to the USSR and the People's Republic of China dropped to sixth and seventh from fifth and sixth places. Imports from Venezuela continued in fifth place and those from France sixth; with only slight changes in order, Australia, Italy and Sweden maintained seventh, eighth and ninth places over the period.

Ranking export growth from 1970 to 1973 by geographic region, Eastern Europe is first (32.2% a year), followed by Other Asia (23.9%), the Americas (14.6%), Middle East (10.2%), Western Europe (5.1%), Oceania (1.8%) and Other Africa (1.7%) in that order. A similar ranking of import growth for the four-year period places the Middle East (41.1%) in first place, followed by Other Africa (23.7%), Eastern Europe (21.7%), Other Asia (20.6%), Oceania (19.4%), the Americas (17.0%) and Western Europe (15.1%).

18.2.2 Commodities

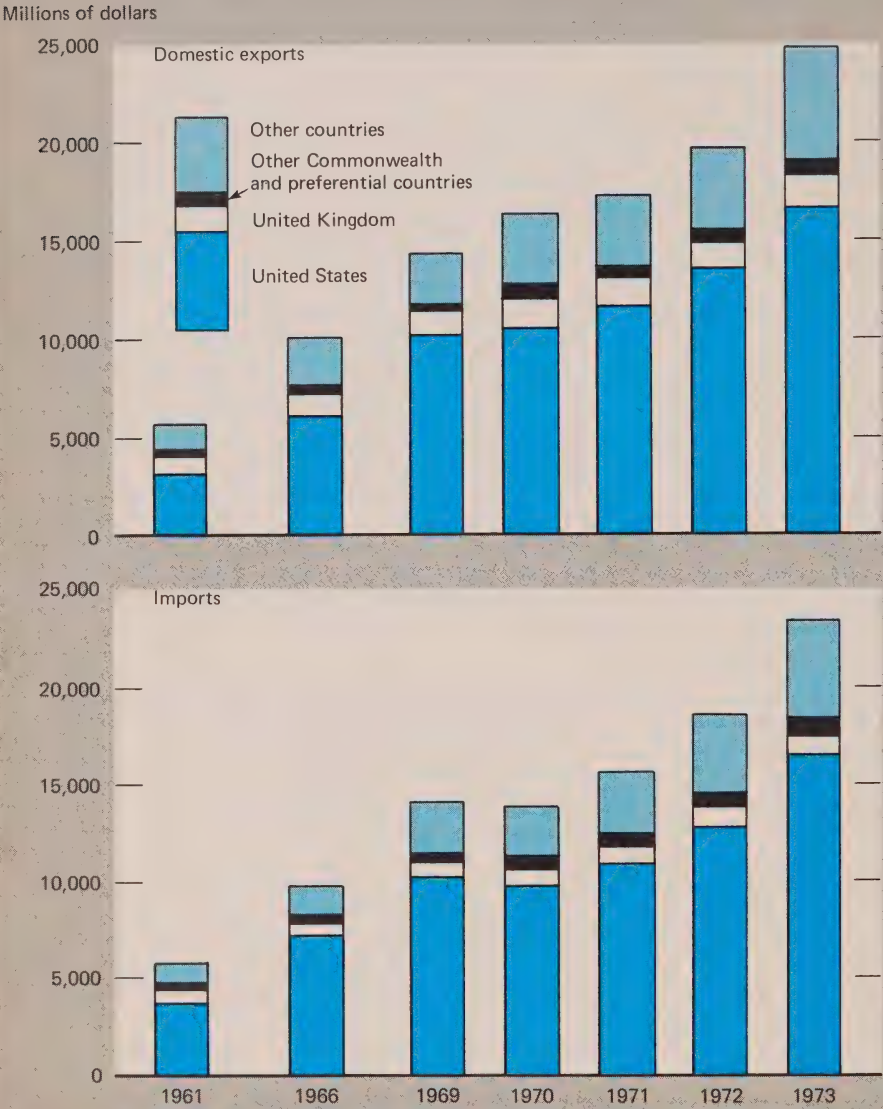
Detailed information on the composition of Canada's domestic exports for 1972 and 1973 is given in Table 18.27. In the case of trade with the United States animals and edible products, metal ores, crude petroleum, softwood lumber and pulp, which in 1973 accounted for 29.5% of exports to that country, were responsible for 42% of the export expansion over 1972. By contrast, motor vehicles and parts made up about 31% of exports to the US in 1973 but only 20.5% of the export growth there. In export trade with countries other than the United States animals and edible products other than wheat, metal ores, other crude materials, and softwood lumber represented 44% of 1973 exports and over 57% of the export gain.

Table 18.28 gives details of Canada's imports for 1972-73. In transactions with the United States, animals and edible products accounted for 6% of imports in 1973 and over 9% of the import increase from that country. Motor vehicles and parts maintained their share of trade, nearly 33.5%, of the import expansion. On the other hand, crude and fabricated industrial materials represented a slightly smaller proportion of the increase than their 20% share of imports. In trade with countries other than the United States, animals and edible products, crude petroleum and other crude materials made up 32.5% of all imports in 1973 and nearly 57% of the import rise to overseas countries in 1973. Oil imports alone represented over 13.5% of all purchases from overseas countries and nearly 25.5% of the rising import bill. Automotive imports from overseas countries recorded a decline in 1973.

18.2.3 Section and stage of fabrication

Tables 18.29 and 18.30 present historical series of Canada's external trade for selected years 1956-73 by section and stage of fabrication. Estimates for years prior to 1958 are subject to some limitations because of the introduction of the revised commodity trade classifications in the early 1960s. To allocate exports and imports into the statistical framework based on stage of fabrication, i.e. crude materials, fabricated materials, and end products, requires a secondary classification of the commodities in certain sections of the standard commodity classification (SCC). Live animals (Section 1), being a natural product, are considered crude materials. Food, feed, beverages and tobacco (Section 2) are distributed as follows: crude materials include natural products not processed beyond cleaning or preparation for shipment,

Exports and imports



such as fresh fruits and vegetables and raw sugar; fabricated materials include commercial feed stocks and commodities that are further processed rather than used for direct consumption; end products comprise prepared pet feeds and commodities that require no further processing but are used directly for consumption, such as cheese, canned foods, whisky, cigars and cigarettes. Sections 3 and 4 are defined in the SCC. Section 5 (Inedible end products) consists of articles rather than materials, i.e. finished commodities that have attained their final degree of processing together with specific parts and accessories of machinery that are classified with the machinery. Section 6 (Special transactions — trade), which contains comparatively few classes, is distributed on the basis of special studies.

Exports. Canada's exports followed a steady upward trend over the 17-year period 1956-73. The acceleration in the growth of domestic exports in the period 1961-66 was followed by somewhat slower growth during the next five-year period. Exports of finished goods recorded much higher rates of increase than those of crude and fabricated materials. Exports increased more rapidly to the US than to all other countries. Domestic exports by section and stage of fabrication, 1956-73 are presented in Table 18.29; average annual rates for major categories are given in Table 18.31.

Imports. At 8.4%, imports rose less than exports over the same period, 1956-73, with interruptions in growth in the second half of the 1950s and in 1970. The sharp acceleration in the growth rate of imports in the years 1961-66 was followed by a moderating trend in the following period 1966-71. Values of imports are shown in Table 18.30 and percentage growth rates in Table 18.31.

Unlike export trade, the growth of import trade with the United States has kept pace with overseas countries. In 1973 total exports and imports reached new highs of \$25,300 million and \$23,300 million, respectively.

18.3 Federal trade services

Canada's economy continues to be vitally dependent on international trade. Competition among industrial nations is intense and increased exports are not easy to achieve. A successful export trade can only be assured by combining good products, efficient production and aggressive, intelligent marketing with government support.

Federal government support is provided through the Department of Industry, Trade and Commerce and the Export Development Corporation. The Department assists Canadian industry throughout the complete cycle — from research, design and development through production to marketing of the finished product. The Export Development Corporation, a Crown agency which reports to Parliament through the Minister of Industry, Trade and Commerce, provides insurance, guarantees, loans and other financial facilities to help Canadian exporters.

18.3.1 Department of Industry, Trade and Commerce

Departmental units involved in international trade are: Office of General Relations, Office of Special Import Policy, Export and Import Permits Division, the International Bureaux, Trade Commissioner Service, Office of International Special Projects, Financing and Aid Branch, Grain Marketing Office, Transportation Services Branch, Fairs and Missions Branch, and the Program Office (Export Market Development), which handles the administration of the Program for Export Market Development.

The Office of General Relations includes a General Trade Policy Branch and a Commodity Trade Policy Branch, responsible, within the Department, for formulating and implementing Canadian external trade policy with particular reference to the activities of the General Agreement on Tariffs and Trade (GATT), the Organization for Economic Co-operation and Development (OECD) and the United Nations Conference on Trade and Development (UNCTAD). It is also responsible for the preparation and conduct of negotiations of intergovernmental commodity agreements, such as those for wheat, coffee and sugar.

The Office of Special Import Policy proposes action to be taken by government in the light of recommendations of the Textile and Clothing Board (with respect to imports of textiles and clothing) and of the Anti-dumping Tribunal (with respect to other "low-cost" products), as well as in other instances where "low-cost" imports have caused or are threatening serious injury to domestic production. It conducts export restraint negotiations with other governments and is responsible for Canadian input into international activities relating to textiles, i.e. under the GATT and the Arrangement Regarding International Trade in Cotton Textiles.

The Export and Import Permits Division administers the federal Export and Import Permits Act. The intention of the Act is to ensure, by means of export controls, that there is an adequate supply and distribution in Canada of goods necessary for defence or other purposes; that no specified goods having a strategic nature will be made available to any destination wherein their use might be detrimental to the security of Canada; and to implement an intergovernmental arrangement or commitment. Also, by means of import controls, the Act is intended to ensure an adequate supply in Canada of goods that are scarce in world markets, or subject to governmental controls in the countries of origin or to allocation by intergovernmental arrange-

ment; to implement action taken under certain other federal acts to support the price or have the effect of supporting the price of specified goods; and to implement an intergovernmental arrangement or commitment. Other functions of this Division are to advise exporters and importers on interpretation and requirements of the Export Control and Import Control Lists and Regulations; to study the economic implications of the Act; and to review Control Lists and practices.

The International Bureaux (European Bureau, Pacific, Asia and Africa Bureau, and Western Hemisphere Bureau) provide the central departmental points of contact on matters affecting Canada's trade and economic relations with other countries and areas. The Bureaux are centralized sources of information on Canada's trade with specific countries or regions and they provide a regional perspective for matters of both international trade relations and export trade development. Their responsibilities include: developing Canada's international trade strategy and programs for individual countries and areas; maintaining and improving access for Canadian products to export markets through negotiation of trade agreements with other countries and consulting on trade relations and trade problems at the official level with foreign governments. They also provide information, advice and guidelines to government agencies and to the business community on foreign governments' trade and economic regulations and practices; maintain contact, normally through Canadian posts abroad, with foreign markets and foreign governments on matters pertaining to markets for Canadian exports; and provide advice to the Department, to other Canadian government agencies and to the Canadian business community on export market problems and opportunities.

The Trade Commissioner Service has 82 trade offices in 57 different countries. Its primary role is to promote Canada's export trade and generally to protect its commercial interests abroad. Accordingly, a trade commissioner is called upon to perform a wide variety of tasks: to act as an export marketing consultant; to bring foreign buyers into contact with Canadian sellers; to help organize trade fairs and trade missions in his territory; to recommend modes of distribution and suitable agents; and to keep headquarters informed of changes in tariffs, exchange controls and other matters that might affect Canada's trade with the country to which he is assigned. He initiates programs to develop markets for those products with the greatest potential in given areas, handles inquiries from Canadian firms and provides personal assistance to the Canadian exporter in his territory. In addition, he acts on behalf of the foreign programs of a number of federal government departments and undertakes agricultural reporting at specified posts. For a Canadian firm wishing to develop a market in his territory, the trade commissioner can supply information on product usage, if any, in that territory, on local production and import data for the product and on prospective users and/or agents for it.

The scheduled return of trade commissioners for official tours of Canada is an effective means of informing Canadian firms interested in export trade, and trade associations are informed well in advance of these visits so that appointments can be arranged for discussion of problems with firms interested in exporting to his territory. Businessmen wishing to interview any trade commissioner on tour may arrange to do so by communicating with the Trade Commissioner Service, the Canadian Manufacturers' Association, the local Chamber of Commerce or Board of Trade, or one of the Department's regional offices.

The Office of International Special Projects consists of two branches: the Defence Programs Branch and the Special Projects Branch, which develop certain types of special export opportunities by promoting Canadian industrial participation in projects and programs abroad. Many of these export opportunities are capital projects requiring goods and services from several sources of supply, no one of which can normally undertake the lead in exploiting such a project. This Office attempts to provide the special government assistance needed to co-ordinate the efforts of all concerned.

The Defence Programs Branch promotes defence export trade through marketing programs aimed at the sale of Canadian defence and defence-related high-technology equipment to friendly countries, and the establishment of arrangements with Canada's allies for co-operative industrial research, development and production in defence-related matters. A major activity is the Canada—United States defence-development and production-sharing program, which entails the joint development and reciprocal procurement of defence items.

The Special Projects Branch identifies and exploits opportunities for capital projects abroad having multi-industry content, including those related to airports, tourism, education,

health care and pollution abatement; provides marketing assistance to service industries, particularly by providing a focal point in the Department for consulting engineers; and co-ordinates departmental marketing activities in the promotion of Canadian participation in projects financed by multilateral and bilateral aid sources such as the World Bank and regional development banks.

The Financing and Aid Branch participates in the development of policies and procedures for external aid, export credits and other export financing arrangements. In addition, it keeps Canadian exporters informed about the range of financing facilities provided by the Canadian government and those available through international financial institutions.

The Grain Marketing Office consolidates the Department's operational and market development activities for grains and oilseeds and their products, and works closely with the Grains Group and the Canadian Wheat Board in a continuing review of grain policies and programs. It follows developments in grain markets and sales opportunities and maintains a comprehensive program of market development and sales promotion.

The Transportation Services Branch is concerned with the transportation environment and with short- and long-term transportation problems that affect Canadian trade and industrial development. Continuing reviews are made of freight rates and services to shippers, and of regional, national and international transportation policies and measures that have an impact on Canadian trade, and assistance is provided to shippers in selecting appropriate transportation routes and modes at lowest possible freight costs. The Branch participates in national and international organizations and conferences concerned with cargo movement, intermodal transport, simplification of documentation and facilitation of trade procedures, and international maritime development.

The Fairs and Missions Branch formulates the departmental program of trade promotions and plans, organizes and manages individual promotional events designed to stimulate the sale of Canadian products and services abroad. The range of its activities includes participating in international trade fairs, solo shows and in-store promotions, and organizing technical seminars and trade missions to and from Canada. Fairs abroad display Canadian products and expertise covering a broad spectrum from electronics and computer equipment to frozen foods; from ocean technology to Canadian styles in clothing and footwear; and from wood products to cattle. The Department provides promotional publicity and a highly organized and specially designed exhibit setting.

Missions and technical seminars vary in type depending on the objective but, in general, out-going missions are used for market investigation and evaluation and identification of technical market access problems, while incoming missions are designed to invite foreign government or company representatives, who can influence buying, to inspect the industrial capacity and technical capabilities of Canadian firms and the products and services they can supply. Technical seminars are used to acquaint potential buyers with Canadian expertise and technology in specific fields.

The Fairs and Missions program includes planned provision to take advantage, at short notice, of foreign market opportunities which cannot be foreseen; these include the Incoming Trade Delegates and Buyers Program and the Export Oriented Training Program.

18.3.2 Office of Tourism

The Office of Tourism comprises the Canadian Government Travel Bureau and the Travel Industry Branch. The Bureau is charged with promoting domestic travel and travel to Canada from other countries; the Branch is concerned with ensuring that the various sectors of the Canadian travel industry — the facilities, services and attractions — make the best possible contribution to tourism activity.

To accomplish its primary function of encouraging Canadians to "Explore Canada" and of attracting visitors to Canada, the Canadian Government Travel Bureau undertakes extensive tourist advertising and promotion campaigns in Canada and abroad, and provides tourist publicity material for newspapers, magazines, radio and television, and film outlets. It works closely with travel agents and tour operators on three continents and maintains an extensive travel counselling service, providing brochures and information to about 7 million potential visitors annually. Offices are operated in New York, Chicago, San Francisco, Minneapolis, Los Angeles, Boston, Philadelphia, Cincinnati, Buffalo, Cleveland, Detroit, Washington, Pitts-

burgh, Atlanta and Seattle in the United States; and in London, Paris, Frankfurt, The Hague, Mexico City, Tokyo and Sydney.

The Travel Industry Branch is concerned primarily with the "supply" side of Canadian tourism. Its duties entail close examination of the nature and extent of tourist facilities and services in Canada and appraisal of their adequacy to meet visitor expectations; study of federal, provincial and private programs and policies related to the growth and development of the travel industry; assessment of industry strengths, weaknesses and problems; and preparation of advice to the Minister on ways and means to improve the facilities, services and attractions of the various sectors of the industry. Close liaison is maintained with federal and provincial departments and agencies having activities related to travel and tourism and with major elements of the private sector of the Canadian travel industry. The Branch also keeps under review the tourism and travel policies and practices of other countries, studies trends and developments in international tourism, and concerns itself with the activities of international organizations and agencies that affect Canada's travel industry.

18.3.3 Export Development Corporation

The EDC is a Crown corporation empowered by federal statute to insure Canadian firms against non-payment when Canadian goods and services are sold abroad; to make loans to foreign purchasers of Canadian capital equipment and technical services; to guarantee financial institutions against loss when they are involved in an export transaction by financing either the Canadian supplier or the foreign buyer; and to insure Canadian firms against loss of their investments abroad by reason of political actions. Direction of the affairs of the Corporation is vested in a 12-member board, having its head office in Ottawa and district offices in Montreal, Toronto and Vancouver.

Export credits insurance. EDC may insure Canadian exporters against non-payment when they grant credit to foreign buyers under contracts involving the following classes of export transactions: consumer goods sold on short-term credit usual for the particular trade, which normally ranges from documentary sight draft to a maximum of 180 days; capital goods such as heavy machinery sold on medium-term credit which may extend to a maximum of five years; services rendered to a foreign customer, such as design, engineering, construction, and technological and marketing services; treatment or servicing of goods for a foreign customer; photogrammetric and geophysical surveys, etc. EDC may also insure the payment of "invisible" exports such as the sale or licensing to a foreign customer of any right in a patent, trademark or copyright, advertising fees, fees to auditors, consultants, etc. To assist him in financing for exports, a policy-holder may request EDC to assign the proceeds of any losses payable under a policy to a bank or other agent providing financing in respect of export sales. An exporter may assign an individual bill or he may make a blanket assignment of all his foreign accounts receivable.

The main risks covered under an EDC policy are: insolvency of the foreign buyer; failure of the buyer to pay to the exporter within six months after due date the gross invoice value of goods which he has duly accepted; repudiation by the buyer which does not result from a breach of contract by the exporter and where proceedings against the buyer would serve no useful purpose; blockage of funds or transfer difficulties which prevent the Canadian exporter from receiving payment; war or revolution in the buyer's country; cancellation or non-renewal of an export permit and the imposition of restrictions on the export of goods not previously subject to restriction; and any other cause outside the control of both the exporter and the buyer which arises from events occurring outside Canada and continental United States of America, e.g. the cancellation of an import licence or the imposition of import restrictions on goods not previously subject to licence or restriction.

Export finance. EDC also makes long-term loans to foreign purchasers or guarantees private loans to foreign purchasers at internationally competitive interest rates, to finance Canadian exports of capital equipment and services when extended credit terms are not required and when commercial financing is not available. In addition, where international competition so requires, EDC may guarantee local cost financing provided by the private sector, or may finance directly up to a maximum of 20% of the value of the goods and services exported from Canada in respect of a financed project.

While it is not exclusive, the following capital equipment and services, by industry, are eligible for export financing. Power industry: conventional and nuclear power plants, electrification programs and transmission lines, etc.; transportation industry: aircraft, airport projects, flight simulators, navigational equipment, ocean-going vessels, locomotives, rolling stock, subway systems, integrated pipelines, etc.; communications industry: equipment for telecommunications such as telephone systems, microwave facilities, earth satellite stations, etc.; other capital goods industries: equipment for wood, pulp and paper, chemical, mining, construction and metallurgical projects, etc.; under certain conditions long-term loans and guarantees would be available for airport terminals and hotels; and services: services related to appraisal and development (but not feasibility studies) of natural resources and primary and secondary industry projects. EDC may make loans to foreign national development banks for re-lending to importers in their respective countries to enable them to buy Canadian capital goods.

A transaction must be of substantial value (\$1 million or more) for which extended credit terms (beyond five years) are necessary and justifiable; exceptions may be considered in special circumstances, e.g. to enable a Canadian supplier to participate in the field of his specialization in development projects abroad being financed mainly by foreign lenders. The project must be financially and economically sound and the foreign buyer and the country to which the goods are shipped must be creditworthy. The transaction must have a Canadian material/labour content of not less than 80%, it must provide employment and industrial benefits for Canada, as well as give promise of future markets for Canadian exports in the country or geographical area concerned, and all goods and services financed must normally be exported from Canada.

Foreign investment insurance. EDC offers insurance against certain political risks of loss of Canadian investments abroad. Investments may vary from that of the investor acquiring the right to share in the assets of a business carried on in a foreign country to that of the investor lending money to a person in a foreign country for the purpose of establishing a business in that country.

Only new investments made in developing countries qualify for foreign investment insurance but the Export Development Act allows considerable flexibility as to the type. Coverage cannot be extended to existing investments. Before a policy is issued, the Minister of Industry, Trade and Commerce must be assured that the interests of EDC in insured investments will be protected. In addition, the government of the recipient country must signify its approval of the investment by the particular investor.

The program offers facilities covering three broad political risks: inconvertibility, or inability to repatriate earnings or capital; expropriation; and insurrection, revolution or war. The investor can elect to take out a policy covering any, or all, or any combination of the three political risks; coverage is restricted to a maximum of 15 years. Any person, including private companies, government agencies, partnerships and organizations, carrying on business or other activities in Canada, and wishing to insure a new investment, should approach EDC as early as possible in the planning stages of the investment for an opinion as to the eligibility of the proposed investment for foreign investment insurance.

18.4 Tariffs and trade agreements

18.4.1 Canadian tariff structure

Information relating to rates of duty, value for duty and anti-dumping duty is available from the Department of National Revenue, Customs and Excise, which administers the Customs Act, the Customs Tariff and the Anti-dumping Act. Details of the organization and functions of the Tariff Board will be found in Appendix 1.

The Canadian tariff consists, in the main, of three sets of tariff rates — British preferential, most-favoured-nation, and general.

British preferential tariff rates are, with some exceptions, the lowest rates. They are applied to imported commodities from British countries, with the exception of Hong Kong, when conveyed without trans-shipment from a port of any British country enjoying the benefits of the British preferential tariff into a port of Canada. Some Commonwealth countries have trade agreements with Canada that provide for rates of duty, on certain specified goods, lower than the British preferential rates.

Most-favoured-nation rates are usually higher than the British preferential rates and lower than the general tariff rates. They are applied to commodities imported from countries with which Canada has trade agreements. These rates would apply to British countries when they are lower than the British preferential tariff rates. The most important trade agreement concerning the effective rates applied to goods imported from countries entitled to most-favoured-nation rates is the General Agreement on Tariffs and Trade (GATT).

General tariff rates are applied to goods imported from the few countries with which Canada has not made trade agreements.

There are numerous goods which are duty-free under the British preferential tariff, or under both the British preferential and the most-favoured-nation tariffs, or under all tariffs.

Valuation. In general, the Customs Act provides that the value for duty of imported goods shall be the fair market value of like goods as established in the home market of the exporter at the time when and place from which the goods are shipped directly to Canada when sold “(a) to purchasers located at that place with whom the vendor deals at arm’s length and who are at the same or substantially the same trade level as the importer, and (b) in the same or substantially the same quantities for home consumption in the ordinary course of trade under competitive conditions”. In cases where like goods are not sold for home consumption but similar goods are sold, the value for duty shall be the cost of production of the goods imported plus an amount for gross profit equal in percentage to that earned on the sale of similar goods in the country of export. The value for duty ordinarily may not be less than the amount for which the goods were sold to the purchaser in Canada, exclusive of all charges thereon after their shipment from the country of export. Internal taxes in the country of export (when not incurred on exported goods), the cost of shipping goods to Canada and similar charges do not normally form part of the value for duty. There are, of course, further provisions for determining value for duty under the Act.

Anti-dumping Act. Canada’s Anti-dumping Act provides, in brief, that where goods are dumped, i.e. the export price is less than the normal value, and such dumping has caused, is causing, or is likely to cause material injury to the production of like goods in Canada, or has materially retarded or is materially retarding the establishment of the production in Canada of like goods as determined by the Anti-dumping Tribunal, there shall be levied, collected and paid an anti-dumping duty. This anti-dumping duty is in an amount equal to the margin of dumping of the entered goods.

Drawback. There are provisions in the Customs and Excise Tax Acts for the repayment of a portion of the duty, sales and/or excise taxes paid on imported goods used in the manufacture of products later exported. The purpose of these drawbacks (as these repayments are called) is to assist Canadian manufacturers to compete in foreign markets with foreign producers of similar goods. A second class of drawback, known as “home consumption” drawbacks, is provided for under the Customs Act and the Customs Tariff and applies to imported materials and/or parts used in the production of specified goods to be consumed in Canada.

18.4.2 Tariff and trade arrangements

Canada’s tariff arrangements with other countries fall into three main categories: trade agreements with a number of Commonwealth countries; the General Agreement on Tariffs and Trade (GATT); and other arrangements and agreements.

Canada signed the Protocol of Provisional Application of the General Agreement on Tariffs and Trade on October 30, 1947 and brought the General Agreement into force on January 1, 1948. The Agreement provides for scheduled tariff concessions and the exchange of most-favoured-nation treatment among the contracting parties, and lays down rules and regulations to govern the conduct of international trade. As at November 30, 1973 there were 83 members and two provisional members, Tunisia and the Philippines. GATT is applied on de facto basis also to a number of newly independent states pending decision as to their future commercial policies.

Trade relations between Canada and a number of other countries are governed by trade agreements of various kinds, by exchange of most-favoured-nation treatment under Orders in Council, by continuation to newly independent states of the same treatment originally negotiated with the countries previously responsible for their commercial relations and by even less formal arrangements.

Britain and Ireland will terminate by 1977 their British preferential tariff agreements with Canada. The phasing out of these agreements began on February 1, 1973, as a result of the accession by those countries to the European Economic Community (EEC).

18.4.2.1 Tariff and trade arrangements with Commonwealth countries as at December 31, 1973

Australia. Trade Agreement in force June 30, 1960, modified and continued by an Exchange of Letters, October 25, 1973. GATT effective January 1, 1948. (Bindings of rates of duty and margins of preference on specified products and exchange of tariff preferences.)

Bangladesh (formerly East Pakistan). Relations covered by Trade Agreement of 1937 with Britain. GATT effective December 16, 1972. (Canada accords British preferential treatment.)

Barbados. Relations are based on Canada—West Indies Trade Agreement and protocol thereto (see Commonwealth Caribbean). GATT effective November 30, 1966. (Exchange of preferential tariff treatment.)

Botswana. Relations governed by Trade Agreement of 1937 with Britain. GATT de facto application. (Canada accords British preferential tariff treatment.)

Britain. Trade Agreement effective September 1, 1937; modified by exchanges of letters November 16, 1938 and October 30, 1947. GATT effective January 1, 1948. (Various concessions are granted by each country including exchange of preferential tariff treatment. The Agreement, as modified, includes provisions relating to the colonies, dependencies and trusteeships. Britain terminated its bilateral trade agreement with Canada on February 1, 1973, as a result of Britain's accession to the EEC. The tariff preferences it extends to Canada are being phased out over a transitional period ending in 1977.)

Commonwealth Caribbean (Bahamas, Bermuda, British Honduras, Leeward Islands, Windward Islands). Canada—British West Indies Trade Agreement in force April 30, 1927; Canadian notice of termination of November 23, 1938, was replaced by notice of December 27, 1939, which continued the Agreement. Protocol signed July 8, 1966, provides inter alia for continuation of 1925 Agreement. Bermuda, British Honduras, the Leeward Islands and the Windward Islands participate in GATT. (Exchange of preferential tariff treatment.)

Cyprus. Relations governed by Trade Agreement of 1937 with Britain. GATT effective August 16, 1960. (Exchange of British preferential tariff treatment.)

Fiji. Maintains de facto application of GATT. (Canada accords British preferential tariff treatment to Fiji. Fiji extends most-favoured-nation treatment to Canada.)

Gambia. GATT effective February 18, 1965. (Canada accords British preferential tariff treatment to Gambia. Gambia extends most-favoured-nation treatment to Canada.)

Ghana. GATT effective October 18, 1957. (Canada accords British preferential tariff treatment to Ghana, except on cocoa beans. Ghana extends most-favoured-nation treatment to Canada.)

Guyana. Relations are based on the Canada—West Indies Trade Agreement and protocol thereto (see Commonwealth Caribbean). GATT effective July 5, 1966. (Exchange of preferential tariff treatment.)

India. Since 1897 Canada has unilaterally accorded British preferential treatment without contractual obligation. GATT effective July 8, 1948. (Canada accords British preferential tariff treatment to India. India extends most-favoured-nation treatment to Canada.)

Jamaica. Relations are based on Canada—West Indies Trade Agreement and protocol thereto (see Commonwealth Caribbean). GATT effective August 6, 1962. (Exchange of preferential tariff treatment.)

Kenya. Relations governed by Trade Agreement of 1937 with Britain. GATT effective December 12, 1963. (Canada accords British preferential tariff treatment to Kenya. Kenya extends most-favoured-nation treatment to Canada.)

Lesotho. Relations governed by Trade Agreement of 1937 with Britain. GATT de facto application. (Canada accords British preferential tariff treatment to Lesotho.)

Malawi. Malawi and Canada observe the terms of 1958 Trade Agreement between Canada and the former Federation of Rhodesia and Nyasaland. GATT effective July 6, 1964. (Exchange of preferential tariff treatment.)

Malaysia. Relations governed by Trade Agreement of 1937 with Britain. GATT effective September 16, 1963. (Exchange of British preferential tariff treatment.)

Maldives. Relations governed by Trade Agreement of 1937 with Britain. GATT de facto application. (Canada accords British preferential tariff treatment.)

Malta. Relations governed by Trade Agreement of 1937 with Britain. GATT effective September 16, 1964. (Exchange of British preferential tariff treatment.)

Mauritius. GATT effective March 12, 1968. (Exchange of British preferential tariff treatment.)

New Zealand. Trade Agreement in force May 24, 1932, modified and continued in force by an Exchange of Letters dated July 26, 1973. GATT effective July 26, 1948. (Bindings of rates of duty on specified products and the exchange of tariff preferences.)

Nigeria. Relations governed by Trade Agreement of 1937 with Britain. GATT effective October 1, 1960. (Canada accords British preferential treatment to Nigeria. Nigeria extends most-favoured-nation treatment to Canada.)

Rhodesia. Canada does not recognize the present government of Rhodesia. (Trade embargo exists between Canada and Rhodesia with certain humanitarian exceptions.)

Sierra Leone. Relations governed by Trade Agreement of 1937 with Britain. GATT effective April 27, 1961. (Canada accords British preferential tariff treatment to Sierra Leone. Sierra Leone extends most-favoured-nation tariff treatment to Canada.)

Singapore. GATT membership August 10, 1973.

Sri Lanka, Republic of (formerly Ceylon). Relations governed by Trade Agreement of 1937 with Britain. GATT effective July 29, 1948. (Exchange of British preferential tariff treatment.)

Swaziland. Relations governed by Trade Agreement of 1937 with Britain. GATT de facto application. (Canada accords British preferential treatment to Swaziland.)

Tanzania. GATT effective for Tanganyika December 9, 1961 and extended to Zanzibar upon formation of United Republic, April 23, 1964. (Canada accords British preferential tariff treatment to Tanzania. Tanzania extends most-favoured-nation treatment to Canada.)

Tonga. Tonga maintains de facto application of GATT. (Exchange of British preferential tariff treatment.)

Trinidad and Tobago. Relations are based on Canada—West Indies Trade Agreement and protocol thereto (see Commonwealth Caribbean). GATT effective August 31, 1962. (Exchange of preferential tariff treatment.)

Uganda. GATT effective October 9, 1962. (Canada accords British preferential tariff treatment to Uganda. Uganda extends most-favoured-nation tariff treatment to Canada.)

Western Samoa. No agreement. (Exchange of British preferential tariff treatment.)

Zambia. GATT de facto application. (Canada accords British preferential tariff treatment to Zambia. Zambia extends most-favoured-nation treatment to Canada.)

18.4.2.2 Tariff and trade arrangements with non-Commonwealth countries, as at December 31, 1973

Algeria. Franco—Canadian Trade Agreement of 1933 applied to Algeria. Algeria maintains de facto application of GATT. (Since the creation of Algeria as an independent state in 1962, Canada has continued to grant most-favoured-nation treatment.)

Arab Republic of Egypt. Exchange of notes in force December 3, 1952. GATT effective May 9, 1970. (Exchange of most-favoured-nation treatment.)

Argentina. GATT provisionally effective October 11, 1967.

Austria. GATT effective October 19, 1951. (Exchange of most-favoured-nation treatment.)

Bahrain. Bahrain maintains de facto application of GATT. (Exchange of most-favoured-nation treatment.)

Belgium—Luxembourg. Convention of Commerce with Belgium—Luxembourg Economic Union (including Belgian colonies) entered into effect October 22, 1924. GATT effective January 1, 1948. (Exchange of most-favoured-nation treatment.)

Benelux (Belgium—Netherlands—Luxembourg Customs Union). (See Belgium—Luxembourg and Netherlands.)

Bolivia. Order in Council of July 20, 1935 accepted Article 15 of UK—Bolivia Treaty of Commerce. (Exchange of most-favoured-nation treatment.)

Brazil. Trade Agreement in force April 16, 1943. GATT effective July 31, 1948. (Exchange of most-favoured-nation treatment.)

Bulgaria. Trade Agreement signed February 12, 1973, provides for most-favoured-nation treatment and exception for British preferential tariffs. To be automatically extended for yearly periods.

Burma. GATT effective July 29, 1948. (Exchange of most-favoured-nation treatment.)

Burundi. GATT effective November 25, 1965. (Exchange of most-favoured-nation treatment.)

Cameroon. Franco—Canadian Trade Agreement of 1933 applied to Cameroon. GATT effective November 28, 1960. (Exchange of most-favoured-nation treatment.)

Central African Republic. Franco—Canadian Trade Agreement of 1933 applied to Central African Republic. GATT effective August 14, 1960. (Exchange of most-favoured-nation treatment.)

Chad. Franco—Canadian Trade Agreement of 1933 applied to Chad. GATT effective August 11, 1960. (Exchange of most-favoured-nation treatment.)

Chile. Trade Agreement in force October 29, 1943. GATT effective March 16, 1948. (Exchange of most-favoured-nation treatment.)

China, People's Republic of. Canada—China Trade Agreement of October 13, 1973. (Exchange of most-favoured-nation treatment.)

Colombia. Treaty of Commerce with Britain of February 16, 1866 applies to Canada. Modified by protocol of August 20, 1912 and exchange of notes December 30, 1938. (Exchange of most-favoured-nation treatment.)

Congo (Brazzaville). Franco—Canadian Trade Agreement of 1933 applies to Congo (Brazzaville). GATT effective August 15, 1960. (Exchange of most-favoured-nation treatment.)

Costa Rica. Modus vivendi in force January 26, 1951. (Exchange of most-favoured-nation treatment.)

Cuba. GATT effective January 1, 1948. (Exchange of most-favoured-nation treatment.)

Czechoslovakia. Convention of Commerce in force November 14, 1928. GATT effective May 21, 1948. (Exchange of most-favoured-nation treatment.)

Dahomey. Franco—Canadian Trade Agreement of 1933 applied to Dahomey. GATT effective August 1, 1960. (Exchange of most-favoured-nation treatment.)

Denmark (including Greenland). Treaties of Peace and Commerce with Britain of February 13, 1660 and July 11, 1670 apply to Canada. GATT effective May 28, 1950. (Exchange of most-favoured-nation treatment.)

Dominican Republic. Trade Agreement in force January 22, 1941. GATT effective May 19, 1950. (Exchange of most-favoured-nation treatment, including scheduled concessions.)

Ecuador. Modus vivendi in force December 1, 1950. (Exchange of most-favoured-nation treatment.)

El Salvador. Exchange of notes in force November 17, 1937. (Exchange of most-favoured-nation treatment.)

Equatorial Guinea. Since August 1, 1928, UK—Spain Treaty of Commerce of 1922. Canada—Spain Trade Agreement signed May 25, 1954. GATT de facto application. (Since the creation of Equatorial Guinea as an independent state in 1968, Canada has continued to grant most-favoured-nation treatment.)

Ethiopia. Exchange of notes effective June 3, 1955. (Exchange of most-favoured-nation treatment.)

Finland. Exchange of notes effective November 17, 1948. GATT effective May 25, 1950. (Exchange of most-favoured-nation treatment.)

France and French overseas territories. Trade Agreement in force June 10, 1933. Exchange of notes of September 29, 1934 and additional protocol of February 26, 1935. GATT effective January 1, 1948. (Exchange of most-favoured-nation treatment, including scheduled concessions.)

Gabon. Franco—Canadian Trade Agreement of 1933 applied to Gabon. GATT effective August 17, 1960. (Exchange of most-favoured-nation treatment.)

Germany, Federal Republic of. GATT effective October 1, 1951. (Exchange of most-favoured-nation treatment.)

Greece. Modus vivendi by exchange of notes of July 24-28, 1947. GATT effective March 1, 1951. (Exchange of most-favoured-nation treatment.)

Greenland. (See Denmark.)

Guatemala. Trade Agreement in force January 14, 1939. (Exchange of most-favoured-nation treatment.)

Guinea. Franco—Canadian Trade Agreement of 1933 applied to Guinea. (Since the creation of Guinea as an independent state in 1958, Canada has continued to grant most-favoured-nation treatment.)

Guinea—Bissau. Canada/Portugal Trade Agreement of April 29, 1955 will be applied.

Haiti. Trade Agreement in force January 10, 1939. GATT effective January 1, 1950. (Exchange of most-favoured-nation treatment.)

Honduras. Exchange of notes effective July 18, 1956. Ratified in Honduras September 5, 1956. (Exchange of most-favoured-nation treatment.)

Hungary. Trade Agreement January 1, 1972 effective until January 1, 1977. (Exchange of letters outlining Hungarian intention to increase imports from Canada. Provides for annual consultation.)

Iceland. GATT effective April 21, 1968. (Exchange of most-favoured-nation treatment.)

Indonesia. GATT effective March 1, 1948. (Exchange of most-favoured-nation treatment.)

Iran. Iran accorded most-favoured-nation treatment by Order in Council from September 5, 1956. (Canada grants most-favoured-nation tariff rates as long as Iran accords reciprocal treatment.)

Iraq. Special arrangement by Order in Council effective September 15, 1951. (Exchange of most-favoured-nation treatment.)

Ireland. Trade Agreement in force January 2, 1933. Modified by exchange of letters on December 21, 1967. GATT effective December 22, 1967. (Bindings to Canada of rates of duty on specified products, and exchange of preferential treatment. Ireland terminated its bilateral trade agreement with Canada on February 1, 1973, as a result of Ireland's accession to the EEC. The tariff preferences it extends to Canada are being phased out over a transitional period ending in 1977.)

Israel. GATT effective July 5, 1962. (Exchange of most-favoured-nation treatment.)

Italy. Modus vivendi by exchange of notes effective April 28, 1948. GATT effective January 1, 1950. (Exchange of most-favoured-nation treatment.)

Ivory Coast. Franco—Canadian Trade Agreement of 1933 applied to Ivory Coast. GATT effective August 7, 1960. (Exchange of most-favoured-nation treatment.)

Japan. Agreement on Commerce effective June 7, 1954. GATT effective September 10, 1955. (Exchange of most-favoured-nation treatment.)

Khmer Republic (formerly Cambodia). Franco—Canadian Trade Agreement of 1933 applied to Cambodia. Became a de facto member of GATT in 1968. (Since the creation of Cambodia as an independent state in 1955, Canada has continued to grant most-favoured-nation treatment.)

Korea, Republic of. Trade Agreement in force December 20, 1966. GATT effective April 14, 1967. (Exchange of most-favoured-nation treatment.)

Kuwait. GATT effective June 18, 1961. (Exchange of most-favoured-nation treatment.)

Laos. Franco—Canadian Trade Agreement of 1933 applied to Laos. (Since the creation of Laos as an independent state in 1955, Canada has continued to grant most-favoured-nation treatment.)

Lebanon. Special arrangement by Order in Council of November 19, 1946. (Canada grants most-favoured-nation tariff rates as long as Lebanon accords reciprocal treatment.)

Liberia. Special arrangement by Order in Council effective March 1, 1955. (Canada grants most-favoured-nation treatment.)

Liechtenstein. (See Switzerland.)

Luxembourg. (See Belgium—Luxembourg.)

Malagasy Republic. Franco—Canadian Trade Agreement of 1933 applied to Malagasy Republic. GATT effective September 30, 1963. (Exchange of most-favoured-nation treatment.)

Mali. Franco—Canadian Trade Agreement of 1933 applied to Mali. Mali maintains a de facto application of GATT. (Since the creation of Mali as an independent state in 1960, Canada has continued to grant most-favoured-nation treatment.)

Mauritania. Franco—Canadian Trade Agreement of 1933 applied to Mauritania. GATT effective November 28, 1960. (Exchange of most-favoured-nation treatment.)

Mexico. Trade Agreement in force June 5, 1947. (Exchange of most-favoured-nation treatment.)

Morocco. Various agreements relating to former French, Spanish and International Zones of Morocco. (Since the creation of Morocco as an independent state in 1956, Canada has continued to grant most-favoured-nation treatment.)

Netherlands. Convention of Commerce of July 11, 1924 includes Netherlands Antilles and Surinam. GATT effective January 1, 1948. (Exchange of most-favoured-nation treatment.)

Nicaragua. Trade Agreement in force December 19, 1946. GATT effective May 28, 1950. (Exchange of most-favoured-nation treatment.)

Niger. Franco—Canadian Trade Agreement of 1933 applied to Niger. GATT effective August 3, 1960. (Exchange of most-favoured-nation treatment.)

Norway. Convention of Commerce and Navigation with UK of March 18, 1826 applied to Canada. GATT effective July 10, 1948. (Exchange of most-favoured-nation treatment.)

Pakistan. Canada unilaterally accords British preferential treatment without contractual obligation. GATT effective July 30, 1948. (Canada accords British preferential tariff treatment to Pakistan. Pakistan accords most-favoured-nation tariff treatment to Canada.)

Panama. Exchange of notes in force August 12, 1935. (Exchange of most-favoured-nation treatment.)

Paraguay. Exchange of notes in force June 21, 1940. (Exchange of most-favoured-nation treatment.)

Peru. GATT effective October 8, 1951. (Exchange of most-favoured-nation treatment.)

Philippines. Trade Agreement in force August 29, 1972. Granted provisional accession to GATT on August 9, 1973. (Exchange of most-favoured-nation treatment.)

Poland. Convention of Commerce in force August 15, 1936. GATT effective October 18, 1967. (Exchange of most-favoured-nation treatment.)

Portugal, Portuguese adjacent islands and Portuguese overseas provinces. Trade Agreement in force April 29, 1955. GATT effective May 6, 1962. (Exchange of most-favoured-nation treatment.)

Qatar. Qatar maintains de facto application of GATT. (Exchange of most-favoured-nation treatment.)

Romania. Trade Agreement effective for three years from March 22, 1971. GATT effective November 14, 1971. (Exchange of most-favoured-nation treatment and Romania endeavours to provide improved access for Canadian exports. Provides for annual consultation.)

Rwanda. GATT effective January 1, 1966. (Canada grants most-favoured-nation treatment.)

Senegal. Franco—Canadian Trade Agreement of 1933 applied to Senegal. GATT effective June 20, 1960. (Exchange of most-favoured-nation treatment.)

South Africa. Trade Agreement in force October 13, 1932. Exchange of notes August 2-31, 1935, effective retroactively from July 1, 1935. GATT effective June 14, 1948. (Exchange of British preferential rates on scheduled items. Exchange of most-favoured-nation treatment.)

Spain and Spanish possessions. Since August 1, 1928, Canada has adhered to UK—Spain Treaty of Commerce of October 31, 1922. Trade Agreement signed May 26, 1954. GATT effective August 29, 1963. (Exchange of most-favoured-nation treatment.)

Sweden. UK—Sweden Convention of Commerce and Navigation of March 18, 1826 applies to Canada. GATT effective May 1, 1950. (Exchange of most-favoured-nation treatment.)

Switzerland. UK—Switzerland Treaty of Friendship, Commerce and Reciprocal Establishment of September 6, 1855 applies to Canada. By exchange of notes Liechtenstein included under terms of this Agreement, effective July 11, 1947. GATT effective August 1, 1966. (Exchange of most-favoured-nation treatment.)

Syrian Arab Republic. Special Arrangement by Order in Council of November 19, 1946. (Canada grants most-favoured-nation treatment tariff rates as long as Syria accords reciprocal treatment.)

Thailand. Modus vivendi effective April 22, 1969. (Exchange of most-favoured-nation treatment.)

Togo. Franco—Canadian Trade Agreement of 1933 applied to Togo. GATT effective March 20, 1964. (Exchange of most-favoured-nation treatment.)

Tunisia. Trade Agreement in force August 8, 1972. Tunisia acceded to GATT provisionally in 1959. (Exchange of most-favoured-nation treatment.)

Turkey. Exchange of notes in effect March 15, 1948. GATT effective October 17, 1951. (Exchange of most-favoured-nation treatment.)

Union of Soviet Socialist Republics. Trade Agreement effective from April 1972 to April 1976. (Exchange of most-favoured-nation treatment and annual consultation.)

United States of America. Trade Agreement of November 17, 1938 suspended as long as both countries continue to be contracting parties to GATT. GATT effective January 1, 1948. (Exchange of most-favoured-nation treatment.)

Upper Volta. Franco—Canadian Trade Agreement of 1933 applied to Upper Volta. GATT effective August 5, 1960. (Exchange of most-favoured-nation treatment.)

Uruguay. Trade Agreement in force May 15, 1940. Additional protocol signed October 19, 1953. GATT effective December 16, 1953. (Exchange of most-favoured-nation treatment.)

Venezuela. Modus vivendi in force October 11, 1950. (Exchange of most-favoured-nation treatment. Made for one year and renewed annually.)

Vietnam. Franco—Canadian Trade Agreement of 1933 applied to Vietnam. (Since 1955, Canada has continued to accord most-favoured-nation rates.)

Yemen, People's Republic of. Yemen maintains de facto application of GATT. (Exchange of most-favoured-nation treatment.)

Yugoslavia. Trade Agreement signed but not ratified October 1973, provides most-favoured-nation treatment except for British preferential tariffs and exception for customs unions and free trade areas.

Zaire (formerly Congo, Kinshasa). Belgo—Canadian Convention of Commerce of 1924 applied to Congo (Kinshasa). GATT effective September 11, 1971. (Exchange of most-favoured-nation treatment.)

18.4.2.3 Tariff preferences for specified countries

Canada implemented a system of tariff preferences for specified countries on July 1, 1974. Imports of most manufactured and semi-manufactured products from designated beneficiary countries will be subject to the lower of the British preferential tariff or the most-favoured-nation tariff, less one third. The only notable product group to which the preference system does not apply is textiles.

Beneficiary countries: Algeria, American Samoa, Antigua, Argentina, Ascension, Bahamas, Bahrain, Bangladesh, Barbados, Belize, Bermuda, Bolivia, Botswana, Brazil, British Indian Ocean Territory, British Solomon Islands, British Virgin Islands, Brunei, Bulgaria, Burma, Burundi, Cameroon, Cayman Islands, Central African Republic, Chad, Chile, Christmas Island, Cocos Islands, Colombia, Comoro Islands, Congo, Cook Islands, Costa Rica, Cuba, Cyprus, Dahomey, Dominica, Dominican Republic, Ecuador, Egypt, El Salvador, Equatorial Guinea, Ethiopia, Falkland Islands, Fiji, French Polynesia, French Southern and Antarctic Territories, French Territory of the Afars and the Issas, Gabon, Gambia, Ghana, Gibraltar, Gilbert and Ellice Islands, Greece, Grenada, Guam, Guatemala, Guinea, Guyana, Haiti, Honduras, Hong Kong, India, Indonesia, Iran, Iraq, Israel, Ivory Coast, Jamaica, Kenya, Khmer Republic, Korea (Republic of), Kuwait, Laos, Lebanon, Lesotho, Liberia, Madagascar, Malawi, Malaysia, Maldives, Mali, Malta, Mauritania, Mauritius, Mexico, Montserrat, Morocco, Nauru, Netherlands Antilles, New Caledonia and dependencies, Nicaragua, Niger, Nigeria, Norfolk Island, Pakistan, Panama, Papua New Guinea, Paraguay, Peru, Philippines, Pitcairn, Qatar, Romania, Rwanda, St. Kitts—Nevis—Anguilla, St. Helena, St. Lucia, St. Pierre and Miquelon, St. Vincent, Senegal, Seychelles, Sierra Leone, Singapore, Spanish North Africa, Sri Lanka, Surinam, Swaziland, Syrian Arab Republic, Tanzania (United Republic of), Thailand, Togo, Tonga, Trinidad and Tobago, Tristan da Cunha, Tunisia, Turkey, Turks and Caicos Islands, Uganda, United Arab Emirates, United States Virgin Islands, Upper Volta, Uruguay, Venezuela, Vietnam (Republic of), Western Samoa, Yemen (Democratic), Yugoslavia, Zaïre, Zambia.

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Tables

..	not available	e	estimate
...	not appropriate or not applicable	p	preliminary
-	nil or zero	r	revised
--	too small to be expressed		certain tables may not add due to rounding

18.1 Retail trade, by kind of business and by province, 1970-73¹ and percentage changes 1966-69

Kind of business and province	Per-centage change 1966-69	1970 \$'000,000	1971 \$'000,000	1972 \$'000,000	1973 \$'000,000	Per-centage change 1970-73
Kind of business						
Grocery and combination stores	+19.6	6,849.2	7,260.2	7,890.1	8,828.8	+28.9
All other food stores	+11.9	640.1	654.2	717.7	787.1	+23.3
Department stores	+38.7	2,852.3	3,184.1	3,687.9	4,306.8	+51.0
General merchandise stores	+28.0	848.5	938.8	1,023.6	1,140.5	+34.4
General stores	+1.7	575.2	616.5	678.0	757.3	+31.7
Variety stores	+9.6	552.9	570.7	613.4	642.8	+16.3
Motor vehicle dealers	+10.6	4,197.2	4,924.7	5,662.9	6,764.4	+61.2
Service stations and garages	+23.7	2,530.7	2,694.9	2,892.1	3,172.8	+25.4
Men's clothing stores	+18.6	446.0	475.6	508.3	539.9	+21.1
Women's clothing stores	+25.2	561.4	621.8	672.5	725.3	+29.2
Family clothing stores	+14.2	397.5	423.8	458.1	491.9	+23.7
Shoe stores	+26.1	327.5	345.7	363.4	393.3	+20.1
Hardware stores	+10.0	382.8	408.9	447.9	499.3	+30.4
Furniture, TV and appliance stores	+17.4	847.4	942.3	1,069.0	1,195.2	+41.0
Fuel dealers	-2.0	473.1	523.3	579.0	618.1	+30.6
Drug stores	+21.8	840.0	907.0	980.8	1,081.8	+28.8
Jewellery stores	+17.4	218.5	236.0	262.9	301.5	+38.0
All other stores	+34.7	4,493.6	4,917.7	5,422.2	5,992.3	+33.4
Canada	+20.8	28,033.9	30,646.1	33,929.7	38,239.2	+36.4
Province						
Newfoundland	+18.7	493.4	533.3	603.6	686.3	+39.1
Prince Edward Island	+14.8	131.5	141.0	154.5	177.5	+35.0
Nova Scotia	+17.4	930.0	1,022.9	1,132.5	1,268.7	+36.4
New Brunswick	+18.1	740.5	834.8	918.2	1,033.3	+39.5
Quebec	+18.4	7,074.1	7,681.4	8,485.5	9,538.7	+34.8
Ontario	+22.8	10,885.0	11,877.2	13,014.2	14,524.7	+33.4
Manitoba	+18.0	1,227.2	1,318.1	1,470.0	1,676.0	+36.6
Saskatchewan	+0.5	1,018.4	1,138.9	1,274.9	1,458.8	+43.2
Alberta	+28.3	2,274.0	2,466.6	2,779.6	3,139.4	+38.1
British Columbia ²	+26.3	3,259.8	3,631.9	4,096.7	4,735.8	+45.3

¹Subject to revision.

²Includes the Yukon Territory and Northwest Territories.

18.2 Sales of chain and independent stores, by kind of business, 1970 and 1973 and percentage changes 1966-69

Kind of business	Chain stores				Independent stores			
	Per-centage change 1966-69	1970 \$'000,000	1973 ¹ \$'000,000	Per-centage change 1970-73	Per-centage change 1966-69	1970 \$'000,000	1973 ¹ \$'000,000	Per-centage change 1970-73
Grocery and combination stores	+29.2	3,522.3	4,936.3	+40.1	+11.8	3,327.0	3,892.5	+17.0
All other food stores	-4.1	44.7	61.5	+37.6	+13.4	595.3	725.6	+21.9
Department stores	+38.7	2,852.3	4,306.8	+51.0	-	-	-	-
General merchandise stores	+31.8	658.2	913.0	+38.7	+16.8	190.2	227.5	+19.6
General stores	-8.7	86.9	141.5	+62.9	+3.7	488.3	615.8	+26.1
Variety stores	+8.0	466.0	539.1	+15.7	+20.4	86.9	103.7	+19.4
Motor vehicle dealers	+2.4	66.2	111.4	+68.3	+10.7	4,131.1	6,653.0	+61.0
Service stations and garages	+50.1	143.9	293.6	+104.1	+22.8	2,386.8	2,879.3	+20.6
Men's clothing stores	+18.3	61.8	92.5	+49.7	+18.6	384.2	447.5	+16.5
Women's clothing stores	+45.4	182.6	274.3	+50.2	+17.9	378.8	451.0	+19.1
Family clothing stores	+22.9	101.0	136.2	+34.9	+11.8	296.6	355.7	+19.9
Shoe stores	+25.0	152.8	200.6	+31.3	+26.9	174.8	192.7	+10.3
Hardware stores	+22.9	70.3	95.6	+36.0	+7.6	312.5	403.7	+29.2
Furniture, TV and appliance stores	+10.1	151.4	222.6	+47.0	+19.1	696.0	972.6	+39.7
Fuel dealers	-6.2	71.0	99.6	+40.4	-1.2	402.1	518.4	+28.9
Drug stores	+28.4	125.3	186.6	+48.9	+20.8	714.7	895.2	+25.3
Jewellery stores	+18.6	81.2	114.9	+41.4	+16.7	137.3	186.6	+35.9
All other stores	+36.9	1,761.3	2,411.9	+36.3	+33.4	2,732.3	3,580.5	+31.0
Total, all stores	+30.3	10,599.2	15,137.9	+42.8	+16.1	17,434.7	23,101.3	+32.5

¹Subject to revision.

18.3 Percentage market share of chain stores, by kind of business, 1966 and 1969-73

Kind of business	1966	1969	1970	1971	1972 ¹	1973 ¹
Grocery and combination stores	44.9	48.4	51.4	53.3	54.6	55.9
All other food stores	8.7	7.5	7.0	7.3	7.5	7.8
Department stores	100.0	100.0	100.0	100.0	100.0	100.0
General merchandise stores	74.7	77.0	77.6	78.8	79.3	80.1
General stores	16.1	16.9	15.1	16.8	17.9	18.7
Variety stores	86.7	85.4	84.3	83.9	84.1	83.9
Motor vehicle dealers	1.5	1.4	1.6	1.6	1.6	1.6
Service stations and garages	3.4	4.1	5.7	6.3	7.5	9.3
Men's clothing stores	13.2	13.1	13.9	14.8	16.0	17.1
Women's clothing stores	26.5	30.8	32.5	35.6	36.7	37.8
Family clothing stores	21.9	23.5	25.4	27.0	27.1	27.7
Shoe stores	45.0	44.6	46.6	48.5	49.7	51.0
Hardware stores	15.5	17.4	18.4	18.0	18.2	19.1
Furniture, TV and appliance stores	19.2	18.0	17.9	17.4	17.2	18.6
Fuel dealers	16.0	15.3	15.0	15.9	15.1	16.1
Drug stores	13.4	14.2	14.9	15.4	16.0	17.2
Jewellery stores	33.7	34.0	37.2	38.2	38.5	38.1
All other stores	37.4	38.0	39.2	39.4	39.2	40.2
Total, all stores	33.0	35.6	37.8	38.3	38.8	39.6

¹ Subject to revision.

18.4 Department store sales by department, 1966, 1969, 1970 and 1973

Department	Sales			Sales		
	1966 ¹ \$'000,000	1969 \$'000,000	Per- centage change 1966-69	1970 \$'000,000	1973 \$'000,000	Per- centage change 1970-73
Women's, misses' and children's clothing						
Women's and misses' dresses, house- dresses, aprons and uniforms	62.0	79.1	+27.6	80.4	103.1	+28.2
Women's and misses' coats and suits	48.1	59.0	+22.7	58.6	87.4	+49.1
Women's and misses' sportswear	76.2	113.6	+49.1	123.7	209.6	+69.4
Furs	13.4	15.4	+14.9	13.0	19.1	+46.9
Infants' and children's wear and nursery equipment	55.5	78.3	+41.1	81.1	109.3	+34.8
Girls' and teenage girls' wear	33.1	45.7	+38.1	46.7	64.9	+39.0
Lingerie and women's sleepwear	42.8	51.7	+20.8	53.4	75.3	+41.1
Intimate apparel	33.2	39.6	+19.3	40.2	52.7	+31.1
Millinery	8.5	12.5	+47.1	12.5	13.4	+7.2
Women's and girls' hosiery	30.1	53.9	+79.1	50.2	51.3	+2.2
Women's and girls' gloves, mitts and accessories	35.0	47.5	+35.7	47.8	69.0	+44.4
Women's, misses' and children's footwear	63.4	85.5	+34.9	87.8	117.3	+33.6
Total, women's, misses' and children's clothing	501.3	681.8	+36.0	695.5	972.4	+39.8
Men's and boys' clothing						
Men's clothing	71.5	118.7	+66.0	124.6	211.7	+69.9
Men's furnishings	102.2	149.3	+46.1	158.5	196.3	+23.8
Boys' clothing and furnishings	46.4	57.8	+24.6	61.2	73.8	+20.6
Men's and boys' footwear	30.1	52.8	+75.4	52.1	71.4	+37.0
Total, men's and boys' clothing	250.2	378.5	+51.3	396.4	553.2	+39.6
Food and kindred products	101.2	120.6	+19.2	140.4	218.9	+55.9
Toiletries, cosmetics and drugs	88.8	142.4	+60.4	144.0	204.4	+41.9
Photographic equipment and supplies	27.7	45.0	+62.5	45.1	71.2	+57.9
Piece goods	34.6	41.8	+20.8	45.0	54.7	+21.6
Linens and domestics	58.7	70.8	+20.6	73.5	107.6	+46.4
Smallwares and notions	21.9	35.0	+59.8	38.5	46.0	+19.5
China and glassware	30.8	45.1	+46.4	48.1	60.0	+24.7
Floor coverings	47.6	65.2	+37.0	66.2	100.6	+52.0
Draperies, curtains and furniture covers	36.2	49.8	+37.6	53.9	86.3	+60.1
Lamps, pictures, mirrors and all other home furnishings	17.9	27.6	+54.2	28.7	49.4	+72.1
Furniture	110.6	134.4	+21.5	134.2	227.2	+69.3
Major appliances	97.2	123.2	+26.7	125.8	232.4	+84.7
Television, radio and music	80.1	114.5	+42.9	122.0	197.7	+62.0
Housewares and small electrical appliances	64.4	89.8	+39.4	91.4	151.8	+66.1
Hardware, paints, wallpaper, etc.	51.4	73.8	+43.6	78.7	128.3	+63.0
Plumbing, heating and building materials	17.3	21.0	+21.4	24.7	42.2	+71.5
Jewellery	36.4	51.5	+41.5	52.7	91.8	+74.2
Toys and games	41.8	62.9	+50.5	62.3	94.9	+52.3
Sporting goods and luggage	54.4	75.7	+39.2	81.3	137.9	+69.6
Stationery, books and magazines	50.1	69.6	+38.9	73.5	125.3	+70.5
Gasoline, oil, auto accessories, repairs and supplies	37.4	51.2	+36.9	58.8	93.2	+58.5
Receipts from meals and lunches	41.9	60.5	+44.4	64.1	95.2	+48.5
Receipts from repairs and services	73.8	105.5	+43.0	107.8	164.3	+52.4
All other departments						
Total, all departments	1,973.7	2,737.1	+38.7	2,852.3	4,306.8	+51.0

¹Based on extrapolations of original published data.

18.5 Sales of grocery and combination stores, affiliated and non-affiliated with voluntary groups, by chain and independent stores, 1967-69 and 1972

Year	Corporate chain stores			Independent stores			Total, all stores
	Affiliated	Non-affiliated	Total	Affiliated	Non-affiliated	Total	
1967	\$'000,000 331.5	2,279.2	2,610.7	1,579.2	1,495.6	3,074.8	5,685.5
	% 5.8	40.1	45.9	27.8	26.3	54.1	100.0
1968	\$'000,000 365.9	2,439.7	2,805.6	1,801.7	1,378.2	3,180.0	5,985.6
	% 6.1	40.8	46.9	30.1	23.0	53.1	100.0
1969	\$'000,000 258.6 ^a	2,863.9	3,122.6	1,916.2	1,384.1	3,300.3	6,422.8
	% 4.0	44.6	48.6	29.8	21.5	51.4	100.0
1972	\$'000,000 370.4	3,937.9	4,308.3	2,050.1	1,531.7	3,581.8	7,890.1
	% 4.7	49.9	54.6	26.0	19.4	45.4	100.0

^aDecrease is attributed to the re-classification of some chain store organizations from "affiliated" to "non-affiliated" status.

18.6 Retail sales in shopping centres, by type of store, 1966-70 and 1972 (thousand dollars)

Type of store	1966	1967	1968	1969	1970	1972
Grocery and combination	778,330	864,129	954,107	1,067,569	1,309,431	1,792,962
All other food	32,943	44,092	44,723	50,451	53,392	75,710
Department	554,302	727,461	866,575	1,055,657	1,213,291	1,844,182
General merchandise			26,585	27,316	35,612	53,511
Variety	111,167	127,787	110,475	111,890	112,911	121,066
Service stations and garages	19,853	27,723	32,746	36,620	40,175	51,603
Men's clothing	43,037	48,716	56,283	65,934	78,014	110,010
Women's clothing	70,938	98,504	113,141	132,362	160,260	243,472
Family clothing	38,267	32,327	37,354	41,841	47,857	68,637
Shoe	45,729	60,946	60,379	67,960	76,376	108,251
Hardware	40,283	47,129	51,290	52,666	55,586	68,400
Furniture, TV, radio and appliance	29,007	36,206	42,696	46,763	53,569	68,820
Drug	87,557	107,105	116,962	131,965	152,882	203,513
Jewellery	17,601	22,845	26,622	30,400	33,444	51,516
All other	231,014	307,208	333,312	401,210	443,504	605,068
Total	2,100,028	2,552,178	2,873,248	3,320,604	3,866,305	5,466,720

18.7 Number, sales and receipts of retail stores and service outlets, by size of shopping centre, 1972

Type of outlet	Shopping centres			
	5-15 stores	16-30 stores	31+ stores	Total
Number of outlets				
Retail stores	No. 2,979	2,494	3,851	9,324
Chain store outlets	" 905	918	1,890	3,713
Department store outlets	" 51	58	110	219
Independent stores	" 2,023	1,518	1,851	5,392
Service outlets	" 1,547	722	721	2,990
Total, outlets	No. 4,526	3,216	4,572	12,314
Sales and receipts				
Retail sales	\$'000 1,653,823	1,245,050	2,567,848	5,466,720
Chain store sales	" 985,794	687,115	1,053,005	2,725,916
Department store sales	" 289,290	344,307	1,210,586	1,844,182
Independent store sales	" 378,739	213,628	304,257	896,623
Service receipts	" 79,635	52,188	94,644	226,468
Total, sales and receipts	\$'000 1,733,458	1,297,238	2,662,493	5,693,189

18.8 Receipts from services¹ in shopping centres, by type of outlet, 1967-70 and 1972 (thousand dollars)

Kind of service	1967	1968	1969	1970	1972
Amusement and recreational services					
Regular theatres	3,495	5,007	6,166	10,199	13,019
Billiard parlours	1,156	972	1,083	1,091	1,466
Bowling alleys	3,227	3,654	4,116	5,810	8,011
Other	1,049	1,502	1,599	1,539	2,120
Personal services					
Barber shops	7,286	7,298	8,486	8,743	10,405
Beauty salons	15,210	15,981	17,699	18,963	23,310
Dry cleaning and laundries ^a	18,858	20,490	21,870	23,325	26,610
Shoe repair shops	1,614	1,905	2,001	2,085	3,378
Other	1,196	2,651	3,189	3,522	6,590
Miscellaneous services					
Photographers, automobile and truck rentals, driving schools, etc.	1,615	1,878	2,042	1,564	3,586

18.8 Receipts from services¹ in shopping centres, by type of outlet, 1967-70 and 1972 (thousand dollars) (concluded)

Kind of service	1967	1968	1969	1970	1972
Restaurant services					
Restaurants	51,353	55,573	66,948	75,063	107,704
Take-out food shops	1,445	3,274	4,851	5,600	10,252
Other eating and drinking places	2,101	3,668	4,267	5,422	10,018
Total	109,605	123,853	144,316	162,927	226,468

¹Excludes services to business, financial services, professional health and educational services, and certain others whose businesses do not depend on patrons who frequent the shopping centre, e.g. hotels, mail order business offices, head offices of a retail chain, etc.

²Includes plants, pick-up offices and laundromats. In 1972 receipts from laundromats amounted to \$4,881,000.

18.9 Retail sales of new motor vehicles, 1966-73

Year	Passenger cars		Trucks and buses		Total	
	No.	\$'000	No.	\$'000	No.	\$'000
1966	694,820	2,274,083	132,611	550,508	827,431	2,824,591
1967	679,435	2,210,309	135,872	588,057	815,307	2,798,366
1968	741,915	2,481,141	147,538	634,648	889,453	3,115,789
1969	760,803	2,603,835	156,702	719,044	917,505	3,322,879
1970	640,360	2,158,543	133,881	653,787	774,241	2,812,330
1971	780,762	2,737,516	159,570	815,535	940,332	3,553,051
1972	858,959	3,170,305 ¹	206,662	1,142,754	1,065,621	4,313,059 ²
1973	970,828	3,835,173	255,870	1,535,201	1,226,698	5,370,374

18.10 Retail sales of new motor vehicles by type and source, 1966-73

Year	Passenger cars		Trucks and buses		Total	
	Canadian/US	Overseas	Canadian/US	Overseas	Canadian/US	Overseas
	<i>Number</i>					
1966	626,986	67,834	130,629	1,982	757,615	69,816
1967	605,049	74,836	133,330	2,542	738,379	77,378
1968	637,393	104,522	142,241	5,297	779,634	109,819
1969	638,270	122,533	149,597	7,105	787,867	129,638
1970	497,185	143,175	124,664	9,217	621,849	152,392
1971	592,319	188,443	147,001	12,569	739,320	201,012
1972	653,933	205,026	189,577	17,085	843,510	222,111
1973	782,914	187,914	235,449	20,421	1,018,363	208,335
	<i>Thousand dollars</i>					
1966	2,128,112	145,971	545,261	5,247	2,673,373	151,218
1967	2,045,733	164,576	581,367	6,690	2,627,100	171,266
1968	2,238,712	242,429	620,184	14,464	2,858,896	256,893
1969	2,308,109	295,726	699,536	19,508	3,007,645	315,234
1970	1,795,709	362,834	628,532	25,255	2,424,241	388,089
1971	2,225,121	512,395	779,544	35,991	3,004,665	548,386
1972	2,554,779	615,526	1,087,306	55,448	3,642,085	670,974
1973	3,197,173	638,000	1,466,448	68,753	4,663,621	706,753

18.11 Direct sales by commodity, 1966, 1971 and 1972

Commodity	1966	1971	1972		Percentage change 1966-72
	\$'000	\$'000	\$'000	%	
Meat, fish and poultry	5,408	11,612	12,571	1.4	+23.2
Frozen food plans	21,799	18,062	23,568	2.5	+8.1
Dairy products	177,937	185,000 ^P	186,000 ^P	20.0 ^P	+4.5
Bakery products	67,269	42,897 ^T	43,000 ^P	4.6 ^P	-36.1
All other foods and beverages	14,539	18,037	19,656	2.1	+35.2
Canvas, awnings, sails, tents, etc.	3,845	6,437	5,549	0.6	+44.3
Clothing	14,364	12,981	9,244	1.0	-35.6
Fur goods	2,455	7,046	7,067	0.8	+187.9
Furniture, re-upholstery and repairs	26,800	32,535	34,868	3.8	+30.1
Books	45,332	53,975	63,287	6.8	+46.1
Newspapers	94,210	130,000 ^T	143,000 ^P	15.4 ^P	+51.8
Magazines	9,533	16,348	18,227	2.0	+91.2
Aluminum windows, doors, screens and awnings	13,925	16,944	18,386	2.0	+32.0
Dinnerware, kitchenware and utensils	16,315	25,535	31,625	3.4	+93.8
Sail boats and pleasure craft	5,021	8,799	9,186	1.0	+83.0
Household electrical appliances	32,279	46,582	63,053	6.8	+95.3
Pharmaceuticals and medicines	5,377	4,897	5,172	0.6	-3.8

18.11 Direct sales by commodity, 1966, 1971 and 1972 (concluded)

Commodity	1966	1971	1972		Percentage change 1966-72
	\$'000	\$'000	\$'000	%	
Brushes, brooms, mops and household soaps and cleaners	17,414	23,471	27,352	2.9	+57.1
Cosmetics and costume jewellery	53,099	77,744	91,386	9.8	+72.1
Phonograph records	14,453	14,260	26,421	2.8	+82.8
Greenhouse flowers and nursery seeds, stocks, etc.	13,379	19,688	25,461	2.7	+90.3
Miscellaneous ¹	36,573	61,509	63,936	6.9	+74.8
Total, all commodities	691,327	834,359 ²	928,015	100.0	+34.2

¹Includes leather goods, textiles, stamps, coins and personal stationery and sales of merchandise to credit-card holders of gasoline oil companies, etc.

18.12 Consumer credit balances outstanding, 1966 and 1969-73 (million dollars)

Item	1966	1969	1970	1971	1972	1973
Instalment financing by sales finance and consumer loan companies	1,258	1,371	1,136	891	1,025	1,158
Cash loans						
Under \$1,500	648	596	525	440	383	341
Over \$1,500	441	1,079	1,190	1,036	1,238	1,424
Chartered banks	2,458	4,157	4,663	5,777	7,144	8,878
Quebec savings banks	16	24	22	25	30	36
Life insurance companies policy loans	450	660	759	784	813	867
Credit unions and caisses populaires	937	1,401	1,493	1,690	2,000	2,420
Department stores	610	705	720	754	823	961
Furniture, TV, radio and household appliance store loans	162	152	148	160	169	183
Other retail dealers	581	672	683	692	755	841
Other credit card issuers	88	153	186	226	233	249
Public utility companies	130	164	181	198	231	235
Total	7,778	11,134	11,706	12,673	14,844	17,592

18.13 Summary statistics of major traveller accommodation groups, 1970

Accommodation group	Locations No.	Rooms No.	Cabins and cottages No.	Tent trailer spaces No.	Total receipts \$'000
Hotels	5,028	168,707	...	...	1,128,409
Motels	3,895	65,001	3,741	...	165,756
Tourist homes	515	4,810	74	161	3,755
Tourist courts and cabins	2,809	1,132	22,528	4,854	23,860
Outfitters	1,654	963	11,451	15	30,920
Tent and trailer campgrounds	2,073	1,042	5,154	173,865	27,325
Total	15,974	241,655	42,948	178,895	1,380,025

18.14 Locations and receipts of major traveller accommodation groups, by province, 1970

Province or territory	Hotels		Motels		Total receipts ¹	
	Locations No.	Receipts \$'000	Locations No.	Receipts \$'000	\$'000	% distribution
Newfoundland	71	13,137	19	^a	16,375	1.2
Prince Edward Island	17	1,858	45	1,392	4,179	0.3
Nova Scotia	95	16,380	134	7,441	25,199	1.8
New Brunswick	65	10,411	140	6,193	17,699	1.3
Quebec	1,784	265,018	722	31,994	313,224	22.7
Ontario	1,304	350,213	1,457	59,657	448,533	32.5
Manitoba	267	84,559	109	4,925	92,172	6.7
Saskatchewan	406	63,879	136	5,604	72,227	5.2
Alberta	456	135,923	307	14,208	153,149	11.1
British Columbia	512	174,792	802	30,818	216,884	15.7
Yukon Territory	39	6,874	19	1,389	9,292	0.7
Northwest Territories	12	5,365	5	^a	6,177	0.4
Canada	5,028	1,128,409	3,895	165,756	1,380,025	100.0

¹ Includes tourist homes, tourist courts and cabins, outfitters, and tent and trailer campgrounds.

^a Confidential under the Statistics Act.

18.15 Restaurant receipts, by province, 1970-73

Province	Percentage change 1966-69	1970 \$'000	1971 \$'000	1972 \$'000	1973 \$'000	Percentage change 1970-73
Newfoundland	-11.7	10,813	11,987	13,069	15,479	+43.2
Prince Edward Island	-0.4	3,153	3,191	3,208	3,650	+15.8
Nova Scotia	+14.0	30,183	31,267	33,981	37,072	+22.8
New Brunswick	+16.3	24,380	25,756	28,005	30,935	+26.9
Quebec	+11.2	411,597	439,376	481,131	536,585	+30.4
Ontario	+7.6	423,176	446,697	483,234	554,188	+31.0
Manitoba	+13.7	57,285	59,084	63,369	71,178	+24.5
Saskatchewan	-9.0	35,320	36,198	38,486	43,651	+23.6
Alberta	+28.7	102,901	105,327	107,765	114,819	+11.6
British Columbia ¹	+18.9	120,084	127,358	134,359	153,833	+28.1
Canada	+11.1	1,218,892	1,286,241	1,386,607	1,561,390	+28.1

¹Includes the Yukon Territory and Northwest Territories.**18.16 Receipts, taxes and paid admissions of motion picture and drive-in theatres, 1966-72**

Year	Motion picture theatres		Drive-in theatres	
	Receipts and taxes \$'000	Paid admissions '000	Receipts and taxes \$'000	Paid admissions '000
1966	88,856.2	87,694.0	12,027.9	11,265.2
1967	97,233.2	85,530.6	13,546.6	12,042.2
1968	106,309.1	84,936.8	15,587.7	12,251.9
1969	109,847.8	78,917.7	16,690.9	11,308.4
1970	119,802.4	80,826.1	18,164.2	11,489.4
1972 ¹	131,399.1	81,240.5	19,053.5	10,558.6

¹No survey was conducted in 1971.**18.17 Billings of advertising agencies, 1969, 1970 and 1972 (thousand dollars)**

Type of medium or service	1969	1970	1972
Media billings			
Print media	158,807.2	159,576.3	171,983.3
Television	138,061.2	142,379.6	171,358.6
Radio	55,031.9	56,247.6	58,428.3
Outdoor	12,428.8	12,132.1	13,480.1
Total, media billings	364,329.0	370,335.5	415,250.2
Production cost			
Print	35,877.3	37,168.1	48,484.5
Television	26,144.4	28,354.0	28,200.7
Radio	5,194.7	5,825.5	5,038.6
Outdoor	1,880.3	1,376.8	2,505.3
Direct mail	15,347.7	17,956.3	20,782.3
Other	1,558.9	1,715.7	2,942.2
Total, production cost	86,003.3	92,396.4	107,953.5
Total, advertising billings	450,332.3	462,732.0	523,203.7
Research			
Market surveys, etc.	5,810.5	7,620.1	11,862.0
Total, gross billings	456,142.8	470,352.1	535,065.7

18.18 Sales of wholesale merchants, by kind of business, 1970-73

Kind of business	Per-centage change 1966-69	1970 \$'000,000	1971P \$'000,000	1972P \$'000,000	1973P \$'000,000	Per-centage change 1970-73
Consumer goods trades	+28.3	11,946.1	12,728.6	14,148.6	16,135.9	+35.1
Automotive parts and accessories	+43.6	1,355.1	1,519.0	1,721.1	2,060.4	+52.0
Motor vehicles	+49.5	555.2	627.2	741.8	841.7	+51.6
Drugs and drug sundries	+31.7	612.2	653.7	700.6	754.7	+23.3
Clothing and furnishings	+29.5	304.7	307.6	334.3	358.2	+17.5
Footwear	+38.9	81.3	77.6	75.4	83.3	+2.5
Other textiles and clothing accessories	+17.9	518.2	588.5	656.5	705.3	+36.1
Household electrical appliances	+40.4	531.9	600.4	673.1	801.5	+50.7
Tobacco, confectionery and soft drinks	+29.2	940.5	999.8	1,081.0	1,182.5	+25.7
Fresh fruits and vegetables	+23.8	519.4	558.7	607.0	653.2	+25.8
Meat and dairy products	+21.7	780.7	757.3	871.6	1,060.7	+35.9
Floor coverings	+49.5	236.8	275.9	318.6	369.6	+56.1
Groceries and food specialties	+22.1	3,717.3	3,830.1	4,223.1	4,799.7	+29.1
Hardware	+9.6	617.2	638.3	677.4	754.7	+22.3
Other consumer goods	+37.3	1,175.6	1,294.6	1,467.1	1,710.4	+45.5

18.18 Sales of wholesale merchants, by kind of business, 1970-73 (concluded)

Kind of business	Per- centage change 1966-69	1970 \$'000,000	1971P \$'000,000	1972P \$'000,000	1973P \$'000,000	Per- centage change 1970-73
Industrial goods trades	+10.7	11,101.4	12,167.5	14,018.0	17,945.3	+61.6
Coal and coke	-13.9	68.8	65.0	49.0	43.1	-67.8
Grain	-53.7	892.8	1,002.5	1,225.3	2,098.9	+135.1
Electrical wiring supplies, construction materials, apparatus and equipment	+17.1	401.6	447.3	527.0	626.3	+55.9
Other construction materials and supplies, including lumber	+27.0	2,597.0	3,115.3	3,730.7	4,719.6	+81.7
Farm machinery	-2.1	632.6	792.8	958.2	1,258.8	+99.0
Industrial and transportation equipment and supplies	+20.6	2,022.1	2,222.8	2,596.1	3,168.7	+56.7
Commercial, institutional and service equipment and supplies	+51.9	564.8	592.7	666.0	789.1	+39.7
Newsprint, paper and paper products	+16.2	409.0	420.6	448.3	518.9	+26.9
Scientific and professional equipment and supplies	+50.5	324.4	337.0	367.6	407.8	+25.7
Iron and steel	+48.5	1,259.4	1,306.3	1,446.0	1,758.2	+39.6
Junk and scrap	+21.5	521.5	423.9	439.4	619.5	+18.8
Other industrial goods	+26.2	1,407.4	1,441.4	1,564.2	1,936.1	+37.6
Total, all trades	+18.8	23,047.5	24,896.1	28,166.6	34,081.2	+47.9

18.19 Sales of farm implements and equipment, by province and by major group, 1966, 1971 and 1972

Province and major group	1966 \$'000	1971 \$'000	1972 \$'000	%	Percentage change 1966-72
Province					
Atlantic Provinces	11,259	9,778	11,033	2.6	-2.0
Quebec	38,874	45,526	56,559	13.5	+45.5
Ontario	87,085	90,055	114,712	27.3	+31.7
Manitoba	55,774	30,736	38,003	9.0	-31.9
Saskatchewan	126,201	71,897	101,111	24.1	-19.9
Alberta	89,403	68,358	86,693	20.6	-3.0
British Columbia	8,318	9,815	12,134	2.9	+45.9
Total	416,914	326,165	420,245	100.0	+0.8
Major group					
Tractors and engines	149,467	117,370	162,691	38.7	+8.9
Ploughs	19,659	9,534	11,519	2.7	-41.4
Tilling, cultivating and weeding machinery	28,807	19,395	26,094	6.2	-9.4
Planting, seeding and fertilizing machinery	20,117	16,402	17,957	4.3	-10.7
Haying machinery	29,853	21,819	29,663	7.1	-0.6
Harvesting machinery	110,032	68,182	78,162	18.6	-29.0
Machines for preparing crops for market or for use	15,378	18,168	23,682	5.6	+53.5
Farm wagons, boxes and sleighs	5,740	10,821	15,848	3.8	+176.1
Barn equipment	10,078	14,374	16,712	4.0	+65.8
Farm dairy machinery and equipment	6,816	7,083	11,631	2.8	+70.6
Spraying and dusting equipment	3,406	2,538	2,887	0.7	-15.2
Pump and irrigation equipment and miscellaneous farm equipment	17,561	20,479	23,401	5.6	+33.3

18.20 Summary statistics of co-operative marketing and purchasing associations, 1968-72 and by province, 1970-72

Year and province	Associ- ations	Share- holders or members	Farm marketings \$'000	Sales of merchan- dise \$'000	Total business ¹ \$'000
1968	1,312	1,399,000	1,285,600	715,000	2,039,900
1969	1,244	1,388,000	1,231,900	721,400	1,995,600
1970	1,230	1,431,000	1,288,400	743,100	2,074,400
1971	1,210	1,476,000	1,403,100	819,000	2,266,400
1972	1,120	1,491,000	1,708,300	906,300	2,666,900
Newfoundland	1970 37	13,000	1,300	13,100	14,900
	1971 36	14,000	1,500	15,600	17,700
	1972 37	16,000	1,700	19,100	21,400
Prince Edward Island	1970 15	10,000	4,100	9,600	13,900
	1971 18	10,000	4,300	10,500	15,000
	1972 14	10,000	3,700	12,400	16,400
Nova Scotia	1970 82	34,000	44,400	30,000	75,700
	1971 81	35,000	45,000	33,000	79,300
	1972 81	34,000	52,800	37,300	92,000
New Brunswick	1970 43	17,000	12,400	19,500	32,300
	1971 43	18,000	10,000	20,800	31,400
	1972 42	18,000	10,900	24,300	36,000

18.20 Summary statistics of co-operative marketing and purchasing associations, 1968-72 and by province, 1970-72 (concluded)

Year and province		Associations	Shareholders or members	Farm marketings \$'000	Sales of merchandise \$'000	Total business ¹ \$'000
Quebec	1970	394	129,000	209,400	177,500	394,700
	1971	372	143,000	214,600	197,200	419,100
	1972	340	145,000	263,400	211,500	481,400
Ontario	1970	123	103,000	94,500	116,400	215,500
	1971	132	110,000	88,600	132,700	225,900
	1972	105	107,000	101,700	136,100	242,600
Manitoba	1970	77	169,000	48,000	59,200	120,700
	1971	75	180,000	53,500	63,600	130,800
	1972	74	182,000	59,600	68,800	146,100
Saskatchewan	1970	259	459,000	405,700	140,800	557,400
	1971	247	445,000	468,700	145,600	624,300
	1972	236	443,000	617,300	159,900	788,700
Alberta	1970	120	293,000	243,900	107,400	354,000
	1971	128	314,000	267,000	120,900	391,200
	1972	112	323,000	314,900	144,300	463,400
British Columbia	1970	76	60,000	112,400	52,800	166,300
	1971	74	60,000	126,200	53,800	182,400
	1972	75	65,000	138,900	59,300	202,200
Interprovincial	1970	4	144,000	112,300	16,700	129,100
	1971	4	147,000	123,600	25,200	149,200
	1972	4	148,000	143,300	33,100	176,600

¹Includes service revenue and other income.**18.21 Sales of products handled by marketing and purchasing co-operatives, 1969-72 (thousand dollars)**

Product	1969	1970	1971	1972
Marketing	1,231,900	1,288,400	1,403,100	1,708,300
Dairy products	378,000	401,100	412,700	478,500
Fruits and vegetables	52,300	47,600	48,900	48,800
Grains and seeds	500,500	526,400	627,400	811,300
Livestock and livestock products	231,900	242,000	235,400	281,900
Eggs and poultry	54,700	57,500	61,300	66,600
Miscellaneous	14,500	13,800	17,400	21,200
Purchasing	721,400	743,100	819,000	906,300
Food products	223,200	239,500	271,500	295,500
Clothing and home furnishings	26,300	26,500	26,900	31,100
Hardware	57,200	56,000	62,600	75,100
Petroleum products	111,600	119,700	127,300	140,800
Feed	147,800	152,900	159,400	159,500
Fertilizer and spray material	48,600	42,300	49,800	62,700
Machinery and equipment	37,100	29,700	39,500	51,700
Building material	39,400	39,700	45,100	48,600
Miscellaneous	30,200	36,800	36,900	41,300
Total	1,953,300	2,031,500	2,222,100	2,614,600

18.22 Value and volume of sales of alcoholic beverages, years ended Mar. 31, 1972 and 1973

Province or territory	Spirits		Wines		Beer		Total	
	1972	1973	1972	1973	1972	1973	1972	1973
	Value \$'000							
Nfld.	17,963	21,398	1,640	2,230	28,179	33,731	47,782	57,359
PEI	5,988	6,836	771	927	4,202	4,764	10,961	12,527
NS	38,419	44,172	6,925	7,839	33,285	37,093	78,629	89,104
NB	24,459	27,704	5,196	5,677	25,514	28,615	55,169	61,996
Que.	194,834	204,909	59,635	67,707	225,097	244,242	479,566	516,858
Ont.	392,738	431,460	80,265	97,673	317,155	355,012	790,158	884,145
Man.	53,448	58,902	8,359	9,522	41,771	43,821	103,578	112,245
Sask.	40,519	51,347	6,470	6,791	37,086	36,204	84,075	94,342
Alta.	89,245	106,766	18,566	23,347	71,142	73,699	178,953	203,812
BC	132,328	148,877	33,581	40,370	94,961	104,239	260,870	293,486
YT	2,084	2,390	400	494	2,038	2,143	4,522	5,027
NWT	3,152	3,626	565	686	2,792	3,184	6,509	7,496
Canada	995,177	1,108,387	222,373	263,263	883,222	966,747	2,100,772	2,338,397
	Volume '000 gal							
Nfld.	469	555	120	155	6,702	8,041	7,291	8,751
PEI	179	164	85	84	1,351	1,361	1,615	1,609
NS	1,050	1,157	685	735	10,524	11,373	12,259	13,265
NB	628	705	526	558	7,457	8,322	8,611	9,585
Que.	5,491	5,759	5,840	6,305	109,840	119,448	121,171	131,512
Ont.	11,820	12,527	7,985	8,687	141,231	145,782	161,036	166,996
Man.	1,562	1,715	1,013	1,125	15,547	16,145	18,122	18,985

18.22 Value and volume of sales of alcoholic beverages, years ended Mar. 31, 1972 and 1973 (concluded)

Province or territory	Spirits		Wines		Beer		Total	
	1972	1973	1972	1973	1972	1973	1972	1973
	Volume '000 gal							
Sask.	1,152	1,458	762	748	13,117	12,676	15,031	14,882
Alta.	2,420	2,853	2,231	2,584	26,757	26,737	31,408	32,174
BC	4,058	4,267	3,828	4,299	38,692	40,930	46,578	49,496
YT	52	58	33	41	516	534	601	633
NWT	71	92	43	59	592	707	706	858
Canada	28,952	31,310	23,151	25,380	372,326	392,056	424,429	448,746

18.23 Revenue of all governments¹ specifically derived from the control, taxation and sale of alcoholic beverages, years ended Mar. 31, 1970-73 (thousand dollars)

Government	1970	1971	1972	1973
Government of Canada	396,260	423,518	471,936	499,819
Provincial and territorial governments				
Newfoundland	12,916	14,450	17,142	20,740
Prince Edward Island	3,665	3,983	4,510	5,182
Nova Scotia	23,935	26,249	28,269	33,648
New Brunswick	17,662	19,279	22,117	24,487
Quebec	111,287	116,102	142,618	151,997
Ontario	180,404	195,008	221,789	255,773
Manitoba	27,941	30,760	34,347	37,745
Saskatchewan	26,476	27,895	31,360	37,594
Alberta	47,372	56,209	64,493	73,799
British Columbia	61,662	66,181	85,419	97,484
Total, provincial governments	513,320	556,116	652,064	738,449
Yukon Territory	1,808	1,865	1,985	2,303
Northwest Territories	2,148	2,404	2,817	3,295
Total, provincial and territorial governments	517,276	560,385	656,866	744,047
Total, all governments	913,536	983,903	1,128,802	1,243,866

¹Revenue of the Government of Canada comprises excise duties, excise taxes, import duties and certain fees and licences. Revenue of provinces and territories includes revenue collected directly by the provincial and territorial governments as well as revenue of liquor authorities but excludes revenue resulting from general retail sales taxation.

18.24 Value of total international trade of Canada, selected years 1956-73 (million dollars)

Year	Exports			Imports			Balance of trade, excess of exports (+) imports (-)
	Domestic	Re-exports	Total	Dutiable	Free	Total	
1956	4,760	73	4,834	3,293	2,254	5,547	-713
1961	5,755	140	5,895	3,115	2,653	5,769	+126
1969	14,443 ^r	428	14,871 ^r	5,907	8,223	14,130	+741
1970	16,401	419	16,820	5,910	8,042	13,952	+2,868
1971	17,397 ^r	423	17,820 ^r	6,535	9,083	15,618	+2,202
1972	19,661	479	20,140	8,023	10,647	18,669	+1,471
1973	24,719	582	25,301	9,525	13,777	23,303	+1,998

18.25 Trade of Canada with Commonwealth and preferential countries, and other countries, selected years 1961-73

Item and year	United States		United Kingdom		Other Commonwealth and preferential countries		Other countries	
	Value \$'000,000	% of total	Value \$'000,000	% of total	Value \$'000,000	% of total	Value \$'000,000	% of total
Domestic exports								
1961	3,107	54.0	909	15.8	329	5.7	1,410	24.5
1966	6,028	59.8	1,123	11.2	547	5.4	2,373	23.6
1969	10,211	70.7	1,096	7.6	589	4.1	2,547	17.6
1970	10,563	64.4	1,481	9.0	760	4.7	3,597	21.9
1971	11,684	67.2	1,380	7.9	679	3.9	3,654	21.0
1972	13,575	69.0	1,370	7.0	631	3.2	4,085	20.8
1973	16,612	67.2	1,582	6.4	861	3.5	5,664	22.9
Imports								
1961	3,864	67.0	618	10.7	292	5.1	995	17.2
1966	7,136	72.3	645	6.6	416	4.2	1,670	16.9
1969	10,243	72.5	791	5.6	572	4.0	2,524	17.9
1970	9,917	71.1	738	5.3	621	4.4	2,676	19.2
1971	10,951	70.1	837	5.4	622	4.0	3,208	20.5
1972	12,878	69.0	949	5.1	775	4.1	4,067	21.8
1973	16,484	70.8	1,005	4.3	986	4.2	4,828	20.7

18.26 Values of total exports and imports, by geographic region and country, 1971-73 (thousand dollars)

Region and country	Total exports ^a		Imports ^a	
	1971	1972	1971	1972
WESTERN EUROPE				
United Kingdom	1,394,937 (2)	1,385,051 (2)	1,598,708 (3)	837,258 (2)
Gibraltar	12,887	15,358	12	13,801
Ireland	1,762	1,575	16,563	437
Malta and Gozo	9,141	10,272	328	42,843
Austria	182,625 (9)	200,598 (9)	12,571	58,981 (15)
Belgium and Luxembourg	22,879	19,082	285,249 (9)	90,131 (14)
Denmark	11,578	10,465	34,700	48,353
Finland	157,219 (11)	160,234 (11)	17,028	19,255
France	322,245 (4)	318,560 (4)	217,803 (10)	250,954 (6)
Germany, Federal Republic of	11,020	23,911	429,417 (4)	512,642 (4)
Greece	676	937	60,896	7,673
Iceland	210,681 (6)	203,978 (8)	783	212
Italy	236,483 (5)	260,482 (7)	297,943 (5)	204,005 (7)
The Netherlands	186,691 (8)	154,428 (12)	287,231 (8)	91,742 (13)
Norway	13,719	17,522	181,510 (12)	53,195
Portugal	65,855 (17)	56,806 (20)	19,704	18,754
Spain	45,394	47,022	67,793 (19)	50,765
Sweden	38,758 (27)	45,392 (25)	60,786	114,178 (9)
Switzerland	1,409,607	1,402,039	86,180 (10)	101,685 (12)
Total, Commonwealth and preferential countries	1,109,253	1,143,852	851,496	966,809
European Economic Community	405,711	385,837	935,360	1,149,474
Other countries	2,924,571	2,931,728	410,328	514,120
Total, Western Europe			2,197,184	2,630,403
EASTERN EUROPE				
Albania	4,024	4,303	12,330	1,666
Bulgaria	908	607	486	1,237
Czechoslovakia	6,164	4,456	9,958	34,196
German Democratic Republic	747	9,600	3,035	4,403
Hungary	4,627	5,269	7,674	11,606
Poland	18,086	31,617	45,195	21,493
Romania	10,924	13,111	12,862	11,778
Union of Soviet Socialist Republics	127,951 (13)	285,492 (5)	8,892	15,199
Yugoslavia	21,429	25,893	292,276 (6)	15,927
Total, Eastern Europe	194,860	380,348	88,183	109,968
MIDDLE EAST				
Bahrain	160	448	789	5,264
Cyprus	1,488	1,376	2,277	518
Qatar	196	232	436	640
Saudi Arabia	1,880	787	851	603
Southern Yemen	1,880	787	1,921	27,064
Turkey	17,349	361	519	139
Ethiopia	32,837	23,647	45	70,881 (16)
Iran	20,870	35,620	66,642 (14)	131,676 (11)
Israel	145	25,454	17,119	20,550
Jordan	1,207	2,350	15,419	22,492
Kuwait	5,046	1,849	3	3
Lebanon		14,096	17	2,593
			994	3,302
				1,943
				3,694
				1,943

18.26 Values of total exports and imports, by geographic region and country, 1971-73 (thousand dollars) (continued)

Region and country	Total exports ¹		Imports ¹	
	1971	1972	1971	1972
MIDDLE EAST (concluded)				
Libya	1,668	4,705	12,900	40,619
Saudi Arabia	5,396	7,122	13,349	60,380
Somalia	1,278	2,358	3,833	54,636
Sudan	20,274	7,770	3,335	162
Syria	27,216	13,202	2,054	427
Turkey	27,432	5,748	25,932	2,812
United Arab Republic	10,214	2,870	3,069	3,899
Total, Commonwealth and preferential countries	3,538	2,870	7,416	75,437
Total, other countries	144,099	111,483	135,675	287,174
Total, Middle East	147,637	114,353	143,091	362,611
OTHER AFRICA				
Gambia	89	96	99	299
Ghana	8,236	8,825	8,622	11,956
Kenya	7,321	5,207	6,194	7,625
Malawi	277	357	1,084	5,440
Mauritius and Dependencies	270	265	423	942
Nigeria	10,285	20,950	22,957	18,129
Sierra Leone	105	274	178	60,778 (18)
South Africa, Republic of	67,017	44,501	467	29,387
Southern Rhodesia	—	17	3	82,158 (19)
Tanzania	4,606	8,416	4,834	3,804
Uganda	800	867	415	58,942 (19)
Zambia	4,149	2,033	6,933	5
Commonwealth Africa, n.e.s.	66	8,738	1,434	4,144
Algeria	31,466	29,179	27,607	4,615
Angola	884	747	950	2,202
Cameroon	3,389	562	980	4,478
Dahomey	1,070	1,262	210	5,532
French Africa, n.e.s.	1,077	5,579	5,279	2,296
Gabon	11	700	744	657
Guinea	219	66	147	21
Ivory Coast	752	3,476	1,477	129
Liberia	1,732	1,618	2,576	118
Malagasy	3,282	464	2,385	1,502
Mauritania	5,183	464	2,488	2,331
Morocco	2,421	5,843	98	2,820
Mozambique	2,416	1,204	3,392	905
Portuguese Africa, n.e.s.	371	1,345	1,194	586
Senegal	1,197	1,967	3,430	4,780
Spanish Africa	1,169	379	3,324	727
Togo	1,166	1,580	450	3,831
Tunisia	5,998	7,507	13,538	1,801
Zaire, Republic of	1,772	1,680	3,444	4,343
Total, Commonwealth and preferential countries	103,221	100,546	118,742	18
Total, other countries	62,286	64,625	67,432	54
Total, other Africa	165,513	165,171	186,174	11

18.26 Values of total exports and imports, by geographic region and country, 1971-73 (thousand dollars) (continued)

Region and country	Total exports ¹		Imports ¹	
	1971	1972	1971	1972
OTHER ASIA				
Bangladesh	—	22,007	54,325	—
Hong Kong	20,624	29,088	80,188 (12)	104,970 (11)
India	151,206 (12)	102,547 (14)	44,610	44,404
Malaysia	15,593	16,870	29,986 (13)	31,813
Pakistan	36,740	41,566	26,867	33,996
Singapore	9,686	9,691	7,320	9,842
Sri Lanka, Republic of	6,061	6,734	17,005	25,584
Afghanistan	2,758	260	4,485	9,816
Burma	1,968	1,720	152	115
Camodia and Laos	—	—	336	9
China, People's Republic of	204,061 (7)	263,639 (6)	10	1
Indonesia	10,185	15,579	23,302	48,377
Japan	831,911 (3)	964,795 (3)	1,061	2,291
Korea, North	24,225	6,650	803,075 (3)	1,071,467 (2)
Korea, South	24,837 (33)	33,289 (28)	—	5
Philippines	39,883	28,994	19,420 (36)	43,728 (28)
Portuguese Asia	—	—	6,211	11,854
Taiwan	14,140	25,820	47	55
Thailand	13,216	11,557	80,706 (11)	126,186 (10)
Vietnam	2,828	3,260	3,011	3,037
Total, Commonwealth and preferential countries	239,910	199,415	7	10
Total, other countries	1,151,949	1,356,577	186,195	226,259
Total, other Asia	1,391,859	1,555,992	937,003	1,307,135
OCEANIA	—	—	1,123,198	1,533,394
Australia	182,864 (10)	163,098 (10)	125,671 (8)	196,746 (8)
Fiji	864	842	8,664	6,936
New Zealand	35,621	39,074	40,254	7,764
British Oceania, n.e.s.	146	119	3	42,696
French Oceania	—	—	—	1
United States Oceania	1,604	672	1,275	9,180
Total, Commonwealth and preferential countries	219,495	203,133	17	10
Total, other countries	2,843	2,002	174,592	246,379
Total, Oceania	222,338	205,135	1,292	9,190
	—	—	175,884	255,569
	—	—	—	326,863
SOUTH AMERICA				
Falkland Islands	—	—	—	—
Guyana	6,871	6,169	25,123	15,942
Argentina	50,544	67,830	8,164	14,390
Bolivia	94,786	1,684	7,246	14,459
Brazil	73,268 (15)	5,341	311	1,156
Chile	10,820	113,955 (16)	50,698	87,074
Colombia	23,937	26,925	6,330 (19)	35,674 (17)
Ecuador	3,731	28,739	32,114	32,639
French Guiana	3,713	6,740	7,415	10,748
Paraguay	364	58	57	43
	—	226	1,611	997

18.26 Values of total exports and imports, by geographic region and country, 1971-73 (thousand dollars) (concluded)

Region and country	Total exports ¹		Imports ¹	
	1971	1972	1971	1972
SOUTH AMERICA (concluded)				
Peru	65,203	60,459	52,131	9,227
Surinam	1,495	1,945	1,850	5,323
Uruguay	3,787	3,078	4,039	7,881
Venezuela	123,374 (14)	154,922 (13)	130,998 (14)	410,908 (5)
Total, Commonwealth and preferential countries	6,874	6,171	8,166	15,942
Total, other countries	382,159	422,978	414,138	549,477
Total, South America	389,033	429,149	422,304	737,156
CENTRAL AMERICA AND ANTILLES				
Bahamas	15,613	13,681	14,683	16,663
Barbados	11,562	11,547	15,940	2,050
Bermuda	13,487	13,394	11,957	346
British Honduras	1,630	1,738	1,621	2,858
Jamaica	40,144	41,099	43,208	3,478
Leeward and Windward Islands	9,951	11,494	10,979	19,649
Trinidad and Tobago	20,742	23,205	28,052	28,551
Costa Rica	5,853	7,064	7,050	5,517
Cuba	59,744	58,943 (19)	82,058 (17)	13,720
Dominican Republic	15,733	17,747	15,592	10,267
El Salvador	4,964	3,976	5,617	16,611
French West Indies	3,799	4,488	3,114	11,076
Guatemala	3,096	4,733	3,562	8,056
Haiti	2,094	4,703	1,853	4,931
Honduras	2,445	3,067	7,002	8
Mexico	80,405 (16)	100,066 (15)	120,478 (15)	6,835
Netherlands Antilles	3,205	3,019	4,738	1,700
Nicaragua	2,581	2,868	3,167	2,743
Panama	6,471	7,803	3,943	19,417
Puerto Rico	47,454	52,788	12,701	52,952 (21)
US Virgin Islands	1,496	1,646	2,765	34,524
Total, Commonwealth and preferential countries	113,129	116,158	126,440	83,282 (18)
Total, other countries	239,909	265,369	330,716	47,176
Total, Central America and Antilles	353,038	381,527	457,156	130,458
NORTH AMERICA				
Greenland	554	6,501	6,149	14
St. Pierre and Miquelon	5,931	6,668	8,357	65
United States	12,024,760 (1)	13,963,363 (1)	17,070,031 (1)	12,878,179 (1)
Total, North America	12,031,245	13,976,532	17,084,537	12,878,258
Total, Commonwealth and preferential countries	2,095,774	2,030,332	2,477,608	1,724,332
Total, other countries and EEC	15,724,314	18,109,603	14,559,397	1,991,296
Total, all countries	17,820,088	20,139,935	16,945,091	21,311,278
			15,618,107	23,302,574

In this table a dash indicates that either there was no trade or the amount was less than \$500.

¹Figures in parentheses indicate rank.

18.27 Domestic exports from Canada to all countries, to the United States and to the United Kingdom, by section and commodity, 1972 and 1973 (thousand dollars)

Section and commodity	All countries		United States		United Kingdom	
	1972	1973	1972	1973	1972	1973
LIVE ANIMALS	86,101	144,688	66,884	117,827	685	1,433
FOOD, FEED, BEVERAGES AND TOBACCO	2,268,982	3,007,857	668,324	861,562	278,186	332,575
Meat, fresh, chilled or frozen	117,798	183,921	69,630	97,005	6,427	8,873
Other meat and meat preparations	14,558	19,329	7,878	11,025	249	376
Fish, whole or dressed, fresh or frozen	71,016	102,943	39,055	49,782	5,231	5,267
Fish, fillets and blocks, fresh or frozen	105,248	144,216	103,312	142,210	302	9
Fish, preserved, except canned	29,965	35,367	12,157	17,966	10	—
Fish, canned	39,082	75,843	6,245	9,018	19,617	41,905
Shellfish	66,273	75,598	60,223	62,840	2,032	2,629
Dairy produce, eggs and honey	56,265	102,252	5,796	41,474	12,566	3,719
Barley	216,956	277,759	20,799	26,445	23,111	5,776
Wheat	927,109	1,219,534	212	237	96,019	137,639
Other cereals, unmilled	27,444	28,292	8,492	5,577	1,826	1,059
Wheat flour	46,646	48,111	170	297	3,900	1,394
Other cereals, milled	16,785	26,130	2,210	7,031	1,334	1,910
Cereal preparations	22,952	33,011	20,992	31,025	200	216
Fruits and fruit preparations	21,690	33,565	15,930	22,966	2,351	4,129
Vegetables and vegetable preparations	54,312	72,286	12,507	17,411	24,328	32,278
Sugar and sugar preparations	24,034	37,636	16,514	18,735	1,281	887
Other foods and materials for food	54,011	81,227	15,365	18,847	3,829	4,028
Oil seed cake and meal	13,736	26,186	947	2,460	11,774	18,530
Other feeds of vegetable origin	33,725	44,412	23,970	29,104	567	50
Other fodder and feed	34,314	43,253	14,431	15,828	11,897	13,123
Whisky	209,587	231,205	203,158	224,511	917	1,566
Other beverages	6,304	6,936	5,352	6,286	27	57
Tobacco	59,172	58,846	2,976	3,483	48,390	47,154
CRUDE MATERIALS, INEDIBLE	3,559,586	5,019,059	2,003,189	2,733,613	306,418	311,685
Raw hides and skins	41,631	55,852	7,179	15,133	1,481	1,830
Fur skins, undressed	30,361	42,757	9,154	14,340	7,484	8,862
Other crude animal products	12,939	19,739	11,270	16,579	170	318
Seeds for sowing	15,255	19,637	8,713	11,322	2,275	3,683
Flaxseed	68,511	112,984	1	293	5,563	13,016
Rapeseed	125,446	230,150	24	1	2,101	426
Other oil seeds, oil nuts and oil kernels	18,902	26,149	5,021	6,208	5,575	4,640
Other crude vegetable products	24,172	26,932	21,343	24,650	72	75
Pulpwood	13,979	12,326	7,799	8,640	—	—
Pulpwood chips	12,578	15,693	11,652	15,693	—	—
Other crude wood products	19,754	19,019	13,797	13,388	17	32
Textile and related fibres	13,297	19,626	6,110	10,392	565	1,338
Iron ores and concentrates	352,681	461,996	244,722	304,329	35,571	51,458
Scrap iron and steel	19,172	35,710	13,864	18,153	46	18
Aluminum ores, concentrates and scrap	21,536	22,839	16,517	16,472	105	312
Copper in ores, concentrates and scrap	272,288	554,275	23,500	43,279	2,016	11,072
Lead in ores, concentrates and scrap	33,514	52,196	4,277	3,629	951	348
Nickel in ores, concentrates and scrap	383,814	441,950	67,590	99,971	156,580	125,039
Precious metals in ores, concentrates and scrap	68,244	88,564	23,065	28,937	34,923	35,956
Zinc in ores, concentrates and scrap	128,740	198,083	19,909	23,418	1,661	359
Radioactive ores and concentrates	40,109	64,150	23,039	46,794	17,070	17,356
Other metals in ores, concentrates and scrap	76,839	76,863	7,434	14,002	12,578	9,936
Crude petroleum	1,007,505	1,482,117	1,007,505	1,482,117	—	—
Natural gas	306,843	350,745	306,843	350,745	—	—
Coal and other crude bituminous substances	106,585	165,503	738	3,680	—	389
Asbestos unmanufactured	235,066	279,474	82,663	93,016	16,858	22,163
Sulphur	28,039	45,007	8,536	9,086	146	—
Other crude non-metallic minerals	67,764	82,168	41,996	48,517	2,415	2,897
Other waste and scrap materials	14,023	16,554	8,930	10,830	194	163
FABRICATED MATERIALS, INEDIBLE	6,568,031	8,194,083	4,657,776	5,697,755	659,307	774,718
Leather and leather fabricated materials	10,470	12,596	8,135	7,582	1,122	2,456
Lumber, softwood	1,128,172	1,558,424	987,597	1,249,833	40,004	98,217
Lumber, hardwood	46,068	39,940	30,464	35,209	988	1,328
Shingles and shakes	65,035	80,247	64,143	77,198	225	657
Other sawmill products	8,180	10,196	7,697	9,846	108	130
Veneer	43,429	51,119	36,989	44,455	535	459
Plywood	53,005	75,556	7,722	11,741	31,417	42,939
Other wood fabricated materials	23,495	30,572	13,946	17,427	7,011	11,148
Wood pulp and similar pulp	820,126	1,058,678	473,103	617,219	62,238	62,642
Newsprint paper	1,157,950	1,287,112	933,761	1,067,833	80,127	76,604
Other paper for printing	59,747	52,308	45,658	33,156	9,233	9,884
Paperboard	46,118	68,749	5,576	12,992	23,858	20,648
Other paper	101,267	147,203	43,611	81,638	23,421	24,097
Yarn, thread, cordage, twine and rope	14,360	17,033	6,117	6,098	976	1,396
Cotton broad woven fabrics	17,575	23,944	2,476	7,068	7,154	5,032
Cotton narrow woven fabrics	15,554	24,810	1,853	2,582	3,309	5,332
Other textile fabricated materials	47,511	49,409	28,460	28,186	4,682	3,369
Oils, fats, waxes, extracts and derivatives	41,087	49,048	4,931	8,626	18,852	12,685
Chemical elements	51,069	68,991	11,406	18,961	32,334	37,871
Other inorganic chemicals	87,472	106,997	71,438	87,922	7,833	6,929

18.27 Domestic exports from Canada to all countries, to the United States and to the United Kingdom, by section and commodity, 1972 and 1973 (thousand dollars) (continued)

Section and commodity	All countries		United States		United Kingdom	
	1972	1973	1972	1973	1972	1973
Organic chemicals	53,209	68,523	30,196	42,203	9,744	9,201
Fertilizers and fertilizer materials	249,283	282,649	197,580	218,582	494	376
Synthetic rubber and plastics materials	75,686	89,113	38,433	42,337	12,126	15,232
Plastics basic shapes and forms	27,058	39,941	12,478	17,751	1,733	3,602
Other chemical products	31,098	42,668	18,888	27,315	1,832	2,607
Petroleum and coal products	210,144	311,524	190,331	292,853	2,636	514
Ferro-alloys	10,273	11,962	2,964	4,203	4,482	4,787
Primary iron and steel	59,082	66,066	39,662	41,382	1,680	2,013
Castings and forgings, steel	56,943	97,532	55,533	96,051	9	486
Bars and rods, steel	40,567	42,135	27,957	27,330	2,601	2,776
Plate, sheet and strip, steel	141,490	145,013	89,430	90,048	12,222	9,619
Railway track material	7,022	16,940	5,649	7,313	78	—
Other iron and steel and alloys	80,347	99,779	70,434	92,436	1,403	976
Aluminum, including alloys	383,781	373,688	230,344	202,862	43,376	34,467
Copper and alloys	408,414	520,709	178,610	215,764	134,881	148,019
Lead, including alloys	37,059	43,191	21,458	18,705	11,823	18,836
Nickel and alloys	311,650	377,156	240,595	224,423	23,532	43,463
Precious metals, including alloys	33,511	60,052	30,910	54,253	136	880
Zinc, including alloys	128,344	203,239	88,514	154,206	21,887	30,170
Other non-ferrous metals and alloys	17,169	24,559	9,711	17,425	3,116	4,715
Metal fabricated basic products	141,516	159,897	93,794	125,956	5,371	6,120
Abrasive basic products	45,221	56,671	40,475	47,938	1,358	2,995
Other non-metallic mineral basic products	83,757	107,702	73,143	83,768	2,723	4,035
Electricity	67,948	109,220	67,948	109,220	—	—
Other fabricated materials, inedible	29,769	31,223	17,656	17,860	4,636	5,008
END PRODUCTS, INEDIBLE	7,136,167	8,308,116	6,142,429	7,161,256	124,464	160,591
Machinery	668,638	843,834	490,961	658,030	19,492	16,863
Engines and turbines, general purpose	40,284	44,887	19,552	21,070	2,543	1,664
Electric generator and motors	19,717	16,164	7,933	10,647	909	344
Other general purpose industrial machinery	89,363	87,532	48,740	61,129	4,558	3,322
Materials handling machinery and equipment	73,400	95,456	57,269	76,598	990	625
Drilling, excavating, mining machinery	34,185	43,174	17,473	21,310	917	1,154
Metalworking machinery	34,860	52,824	25,176	41,606	3,647	2,075
Woodworking machinery and equipment	30,291	39,891	17,152	24,568	1,293	1,176
Construction machinery and equipment	20,010	30,773	11,332	16,513	486	477
Plastics industry machinery and equipment	38,185	51,160	35,086	47,161	824	1,028
Pulp and paper industries machinery	17,598	18,095	10,253	13,465	101	130
Other special industry machinery	53,703	73,620	36,035	49,988	1,885	3,522
Soil preparation, seeding, fertilizing machinery	33,649	44,345	31,009	42,671	325	189
Combine reaper-threshers and parts	83,412	101,119	79,926	97,088	458	671
Other haying and harvesting machinery	36,942	48,092	35,160	45,228	—	63
Other agricultural machinery and equipment	31,953	47,667	29,880	43,724	363	317
Tractors	31,087	49,035	28,985	45,263	191	108
Transportation and communication equipment	5,574,463	6,366,129	5,039,850	5,773,508	48,009	67,611
Railway and street railway rolling stock	73,934	73,155	20,397	15,441	33	15
Passenger automobiles and chassis	2,191,146	2,373,247	2,122,111	2,316,395	33	9
Trucks, truck tractors and chassis	641,102	755,300	587,100	709,177	27	5
Other motor vehicles	145,281	117,927	133,995	105,279	154	210
Motor vehicle engines and parts	514,741	543,901	512,913	539,112	249	200
Motor vehicle parts and accessories	1,226,111	1,547,663	1,145,244	1,454,709	2,662	2,500
Ships, boats and parts	56,241	177,085	36,472	66,855	15,125	25,767
Aircraft, complete with engines	102,355	28,109	2,524	6,688	1,181	34
Aircraft, engines and parts	93,885	108,156	65,463	79,964	7,362	7,733
Aircraft parts, except engines	279,310	277,814	245,013	245,188	1,912	5,377
Other transportation equipment	31,838	62,830	27,830	57,258	87	228
Television and radio sets and phonographs	27,616	33,548	26,806	32,028	118	389
Other telecommunication and related equipment	190,905	267,394	113,984	145,414	19,067	25,142
Other equipment and tools	489,467	582,105	338,085	378,926	33,510	44,641
Heating and refrigeration equipment	27,018	31,704	19,470	20,611	2,508	4,616
Cooking equipment for food	7,177	8,896	1,959	2,852	3,430	3,511
Electric lighting and distribution equipment	70,707	87,596	41,462	54,342	3,153	4,575
Navigation equipment and parts	31,976	57,991	22,601	38,349	543	922
Other measuring, controlling, laboratory, medical and optical equipment	74,639	72,034	34,720	41,400	6,226	6,024
Hand tools and miscellaneous cutlery	18,338	22,429	8,738	10,004	800	1,449
Office machines and equipment	184,192	205,194	151,204	135,194	13,816	19,501
Other equipment and tools	75,420	96,260	57,931	76,173	3,034	4,042
Personal and household goods	186,486	236,892	132,598	165,366	9,981	15,199
Apparel and apparel accessories	94,722	119,759	70,602	85,049	3,046	5,137
Footwear	13,642	18,359	12,163	16,446	629	1,079
Toys, games, sporting, recreation equipment	42,845	49,910	31,239	37,426	2,055	3,144
Other personal and household goods	35,277	48,863	18,594	26,444	4,251	5,838

18.27 Domestic exports from Canada to all countries, to the United States and to the United Kingdom, by section and commodity, 1972 and 1973 (thousand dollars) (concluded)

Section and commodity	All countries		United States		United Kingdom	
	1972	1973	1972	1973	1972	1973
Miscellaneous end products	217,112	279,156	140,936	185,426	13,473	16,278
Medicinal and pharmaceutical products	29,321	38,990	3,061	7,709	1,262	1,849
Medical, ophthalmic, orthopaedic supplies	5,713	8,296	1,715	3,073	421	431
Printed matter	38,294	49,342	32,511	42,739	1,299	1,581
Photographic goods	29,463	35,114	21,201	25,105	3,438	4,418
Firearms, ammunition and ordnance	23,389	27,510	18,893	22,982	397	603
Containers and closures	25,365	32,551	18,746	25,725	620	953
Prefabricated buildings and structures	26,685	34,684	19,978	23,408	864	530
Other end products	38,883	52,669	24,832	34,684	5,172	5,913
SPECIAL TRANSACTIONS — TRADE	41,802	45,355	36,424	39,855	487	843
Total, domestic exports	19,660,669	24,719,157	13,575,025	16,611,868	1,369,546	1,581,845

In this table a dash indicates that either there was no trade or the amount was less than \$500.

18.28 Imports into Canada from all countries, from the United States and from the United Kingdom, by section and commodity, 1972 and 1973 (thousand dollars)

Section and commodity	All countries		United States		United Kingdom	
	1972	1973	1972	1973	1972	1973
LIVE ANIMALS	44,707	137,105	40,467	131,007	766	1,527
FOOD, FEED, BEVERAGES AND TOBACCO	1,355,784	1,844,380	614,955	861,073	59,838	68,164
Meat, fresh, chilled or frozen	132,442	201,739	46,639	75,624	202	221
Other meat and meat preparations	24,926	27,543	11,004	12,045	590	613
Fish and marine animals	80,620	110,153	39,822	53,498	1,322	1,787
Dairy produce, eggs and honey	39,600	72,547	14,885	14,561	668	773
Indian corn, shelled	25,047	65,811	25,046	65,809	—	—
Other cereals and cereal preparations	41,561	62,668	28,854	47,305	6,297	7,210
Bananas and plantains, fresh	35,466	37,736	6	91	—	—
Grapes, fresh	36,631	43,760	34,336	40,815	—	—
Oranges, mandarins and tangerines, fresh	39,370	46,301	28,345	31,132	—	—
Other fresh fruits and berries	69,555	85,937	63,433	78,823	—	—
Fruits, dried or dehydrated	17,278	29,632	8,654	12,929	50	61
Orange juice and concentrates	27,410	31,352	20,079	22,564	10	1
Other fruit juices and concentrates	13,613	19,113	8,614	11,119	505	485
Fruits and products, canned	35,859	43,707	16,295	19,361	1,236	1,259
Other fruits and fruit preparations	15,060	21,928	3,582	7,136	185	370
Nuts, except oil nuts	31,057	38,736	11,504	15,568	199	158
Tomatoes, fresh	28,276	33,015	20,183	23,411	—	—
Other fresh vegetables	86,176	117,509	81,852	110,842	3	10
Other vegetables and vegetable preparations	45,214	60,475	16,793	28,633	2,741	2,851
Raw sugar	130,526	161,960	—	—	—	—
Refined sugar, molasses and syrups	8,767	15,822	4,115	5,400	97	111
Sugar preparations and confectionery	27,450	33,916	6,393	11,174	12,405	12,174
Cocoa and chocolate	29,280	38,109	2,020	3,314	3,603	5,543
Coffee	100,398	123,999	24,488	36,387	37	761
Tea	25,082	25,290	905	806	3,781	4,849
Other foods and materials for foods	69,055	76,670	45,727	47,857	2,277	2,591
Oil seed cake and meal	26,374	46,915	26,374	46,638	—	—
Other fodder and feed	14,464	24,372	13,355	23,112	123	110
Distilled alcoholic beverages	43,472	59,522	3,657	4,142	20,788	23,066
Other beverages	44,992	71,098	2,078	2,764	2,054	2,314
Tobacco	10,764	17,043	5,918	8,214	667	843
CRUDE MATERIALS, INEDIBLE	1,539,784	2,016,253	643,581	780,215	24,689	33,115
Fur skins, undressed	32,828	46,054	15,565	26,123	3,844	4,036
Other crude animal products	29,784	38,187	24,091	31,614	775	345
Soya beans	39,108	50,360	39,105	50,349	—	—
Other oil seeds, oil nuts and oil kernels	16,307	28,374	12,842	26,251	2	15
Rubber and allied gums, natural	19,159	36,651	999	2,435	87	78
Other crude vegetable products	35,207	46,175	26,671	35,999	492	995
Crude wood materials	51,642	53,292	51,636	52,994	1	1
Wool and fine animal hair	21,933	32,661	3,194	7,076	11,052	17,015
Cotton	57,525	70,735	44,462	63,917	44	75
Man-made fibres	39,388	50,512	32,302	42,310	2,365	2,325
Other textile fibres	3,857	4,302	896	1,333	14	21
Iron ore and concentrates	22,291	39,648	20,160	32,121	—	—
Scrap iron and steel	30,800	35,631	30,776	35,611	21	3
Aluminum ores, concentrates and scrap	76,564	93,519	20,455	24,765	1	3
Other metals in ores, concentrates and scrap	109,199	161,636	58,383	77,294	3,103	4,229
Coal	178,792	167,079	178,792	167,079	—	—
Crude petroleum	680,743	940,687	—	—	—	—
Other crude bituminous substances	8,099	8,288	8,060	8,249	—	—
Abrasives, natural	8,270	9,827	7,287	9,020	361	119
Phosphate rock	17,986	23,913	17,743	23,704	—	—
Other crude non-metallic minerals	43,886	54,566	34,930	39,356	1,843	2,851
Other waste and scrap materials	16,415	24,156	15,231	22,615	684	1,002

18.28 Imports into Canada from all countries, from the United States and from the United Kingdom, by section and commodity, 1972 and 1973 (thousand dollars) (continued)

Section and commodity	All countries		United States		United Kingdom	
	1972	1973	1972	1973	1972	1973
FABRICATED MATERIALS, INEDIBLE	3,578,991	4,281,513	2,233,491	2,823,959	233,638	252,470
Leather and leather fabricated materials	44,475	47,549	23,373	27,386	13,108	12,472
Rubber fabricated materials	66,450	59,142	58,545	49,795	1,798	1,719
Lumber	66,730	99,353	60,852	90,152	—	1
Veneer	17,662	22,200	14,310	18,640	177	225
Plywood and wood building boards	57,304	79,054	23,043	39,115	217	234
Other wood fabricated materials	31,210	47,676	24,052	36,460	485	565
Wood pulp and similar pulp	17,027	17,266	15,272	13,204	1	776
Paper and paperboard	110,662	138,689	104,133	130,155	1,561	2,228
Cotton yarn and thread	16,668	18,633	6,903	8,295	2,931	3,055
Man-made fibre yarn and thread	77,252	105,779	42,074	54,241	4,116	7,521
Other yarn and thread	18,777	21,288	9,778	11,150	2,888	4,167
Cordage, twine and rope	14,581	20,118	2,546	4,626	857	1,067
Broad woven fabrics, wool and hair	16,723	22,789	579	714	7,847	10,980
Broad woven fabrics, cotton	104,919	103,119	44,383	47,364	1,389	1,486
Broad woven fabrics, man-made	58,053	69,386	14,445	18,677	2,939	2,504
Broad woven fabrics, mixed fibres	66,258	88,576	32,157	39,262	4,930	7,011
Other broad woven fabrics	23,968	20,006	1,493	1,342	538	673
Coated or impregnated fabrics	59,258	79,133	47,449	62,085	3,525	3,924
Other textile fabricated materials	131,865	110,122	40,007	55,127	25,880	14,000
Vegetable oils and fats, except essential oils	32,455	41,230	14,919	18,889	1,088	1,610
Other oils, fats, waxes, extracts, derivatives	34,214	42,421	28,714	36,271	1,008	1,590
Inorganic chemicals	95,586	119,416	67,907	86,813	10,421	8,560
Organic chemicals	167,755	210,323	113,373	140,416	13,865	18,563
Fertilizers and fertilizer materials	17,106	18,808	16,137	17,651	219	183
Synthetic and reclaimed rubber	44,118	45,872	35,633	37,251	1,793	2,878
Plastics materials, not shaped	155,575	195,151	136,554	174,064	3,323	3,339
Plastic film and sheet	61,725	69,883	50,095	57,791	3,746	2,879
Other plastics basic shapes and forms	48,762	58,896	43,274	52,929	894	903
Dyestuffs, except dyeing extracts	34,977	41,589	11,652	13,607	3,800	4,581
Pigments, lakes and toners	20,135	24,939	13,305	16,647	1,301	1,603
Paints and related products	22,851	28,676	21,179	26,631	1,102	1,323
Other chemical products	161,179	209,668	138,231	182,345	5,125	7,133
Fuel oil	120,285	131,796	14,443	21,188	516	—
Lubricating oils and greases	25,041	30,239	21,284	26,513	139	965
Coke of petroleum and coal	29,575	27,592	22,670	25,009	851	497
Other petroleum and coal products	35,181	24,877	13,620	14,903	5,405	1,543
Bars and rods, steel	69,344	94,779	22,216	47,727	4,551	5,215
Plate, sheet and strip, steel	187,417	222,574	74,850	120,572	9,742	8,604
Structural shapes, steel and sheet piling	47,336	79,369	15,183	41,876	10,752	13,077
Pipes and tubes, iron and steel	77,018	94,855	37,202	51,873	5,684	4,279
Wire and wire rope steel	30,468	40,219	6,401	8,864	8,199	10,489
Other iron and steel and alloys	116,917	121,018	98,114	84,487	4,998	3,341
Aluminum, including alloys	101,035	127,805	83,122	112,551	6,924	7,304
Copper and alloys	51,135	71,629	39,891	56,996	3,408	3,002
Nickel and alloys	68,567	71,672	15,545	17,129	799	4,887
Precious metals, including alloys	13,637	36,788	7,820	24,664	5,167	9,420
Tin, including alloys	21,670	24,177	2,458	5,153	320	134
Other non-ferrous metals and alloys	34,723	41,316	17,671	22,274	2,937	870
Bolts, nuts and screws	68,642	83,022	59,669	71,414	1,485	2,101
Other basic hardware	105,405	94,873	88,185	74,927	3,929	4,756
Chains	17,266	21,232	8,193	11,023	3,151	3,161
Valves	52,863	64,234	36,473	41,154	5,832	10,062
Pipe fittings	39,757	46,734	29,264	36,233	3,161	2,670
Other metal fabricated basic products	79,933	105,018	67,219	90,867	5,600	5,155
Clay bricks, clay tiles and refractories	48,435	59,432	31,832	40,527	3,460	3,686
Sheet and plate glass	31,497	31,199	16,512	20,361	297	517
Other glass basic products	40,552	46,821	30,349	35,200	2,584	3,736
Abrasive basic products	20,287	28,469	17,208	24,208	473	686
Natural and synthetic gem stones	23,165	29,978	3,222	3,662	1,239	1,816
Other non-metallic mineral basic products	40,946	49,086	30,265	38,506	3,140	4,578
Electricity	8,519	6,422	8,519	6,422	—	—
Other fabricated materials, inedible	76,090	97,539	57,723	78,580	6,025	6,166
END PRODUCTS, INEDIBLE	11,947,680	14,776,578	9,195,096	11,695,214	617,444	638,765
Machinery	2,242,091	2,762,046	1,767,630	2,215,611	185,111	185,222
Engines and turbines, diesel, general purpose	40,829	52,990	26,767	37,146	11,873	11,473
Engines and turbines, general purpose, n.e.s.	57,380	72,815	43,426	55,220	10,529	12,295
Electric generators and motors	91,989	114,693	60,438	78,222	16,971	22,659
Bearings	75,272	81,780	51,352	58,104	4,312	5,135
Other mechanical power transmission equipment	63,520	75,161	55,397	65,884	6,152	6,900
Compressors, blowers and vacuum pumps	55,196	59,092	42,886	45,955	6,911	5,499
Pumps, except oil well pumps	40,450	45,983	32,518	37,629	3,810	2,992
Packaging machinery	37,027	48,001	30,995	39,688	1,033	1,777
Other general purpose industrial machinery	89,918	110,832	72,751	90,284	10,469	5,731

18.28 Imports into Canada from all countries, from the United States and from the United Kingdom, by section and commodity, 1972 and 1973 (thousand dollars) (continued)

Section and commodity	All countries		United States		United Kingdom	
	1972	1973	1972	1973	1972	1973
Conveyors and conveying systems	16,926	16,941	11,026	12,539	1,304	1,194
Elevators and escalators	6,488	10,785	5,517	9,378	542	388
Industrial trucks, tractors, trailers, stackers	51,315	78,338	42,792	66,630	5,682	9,177
Hoisting machinery	58,080	64,951	47,546	49,658	1,698	1,756
Other materials handling equipment	45,734	63,747	41,587	59,397	1,546	1,113
Drilling machinery and drill bits	90,056	96,385	84,089	87,473	910	578
Power shovels	68,871	80,814	53,188	62,700	1,205	1,410
Bulldozing and similar equipment	12,876	14,471	11,698	13,069	383	252
Front end loaders	82,949	93,083	79,733	89,259	810	955
Other excavating machinery	36,899	42,203	34,621	39,467	218	410
Mining, oil and gas machinery	79,057	82,983	57,979	66,038	16,305	11,862
Construction and maintenance machinery	70,477	84,436	63,412	75,253	2,066	2,786
Machine tools, metalworking	81,696	118,864	56,583	81,275	7,120	9,430
Welding apparatus and equipment	22,508	25,561	19,860	22,550	623	814
Rolling-mill machinery	19,230	25,733	11,349	10,351	6,022	6,409
Other metalworking machinery	73,197	88,785	53,815	67,067	6,889	7,529
Pulp and paper industries machinery	44,524	40,408	27,126	29,801	9,075	2,238
Printing presses	30,611	40,956	20,861	28,789	4,491	3,802
Other printing machinery and equipment	32,932	46,458	28,713	40,197	1,697	2,659
Spinning, weaving and knitting machinery	49,353	47,654	19,826	23,893	8,954	7,200
Other textile industries machinery	42,159	50,877	27,129	33,783	2,583	2,208
Food, beverages and tobacco industries machinery	39,332	51,760	26,756	36,178	3,444	4,179
Plastics and chemical industry machinery	39,597	52,757	29,486	41,559	1,410	1,130
Other special industry machinery	105,099	145,759	75,616	103,671	3,951	5,186
Soil preparation, seeding and fertilizing machinery	26,498	36,901	24,009	33,415	513	596
Combine reaper-threshers	34,721	41,421	29,908	40,273	45	230
Other haying and harvesting machinery	43,354	67,123	41,970	64,572	319	341
Other agricultural machinery and equipment	61,473	83,597	56,889	78,494	1,378	1,393
Wheel tractors, new	139,467	184,213	102,504	140,776	17,619	18,457
Track-laying tractors and used tractors	78,746	83,965	70,967	76,506	143	114
Tractor engines and tractor parts	106,288	138,775	94,545	123,467	4,106	4,966
Transportation and communication equipment	6,190,975	7,782,802	5,135,314	6,707,000	174,941	168,797
Railway and street railway rolling stock	63,945	52,989	60,903	50,149	1,958	1,890
Sedans, new	1,293,754	1,566,800	941,718	1,286,334	40,995	20,186
Other passenger automobiles and chassis	178,249	207,786	114,254	151,428	12,268	11,447
Trucks, truck tractors and chassis	441,751	570,662	406,481	539,488	679	845
Other motor vehicles	193,548	230,209	137,082	167,601	4,072	5,170
Motor vehicle engines	337,601	382,298	276,282	337,863	26,777	19,113
Motor vehicle engine parts	217,105	366,627	206,946	352,123	3,258	3,509
Motor vehicle parts, except engines	2,272,285	2,738,570	2,206,324	2,659,972	15,235	13,899
Marine engines and parts	63,054	69,323	44,255	54,474	6,326	2,808
Ships, boats and parts, except engines	49,091	61,103	24,868	35,490	5,708	8,483
Aircraft, complete with engines	121,214	260,131	113,414	247,538	2,709	2,930
Aircraft engines and parts	58,758	106,691	48,147	75,656	10,156	29,838
Aircraft parts, except engines	114,257	144,097	106,717	137,440	4,567	2,828
Other transportation equipment	145,564	213,511	59,505	107,087	13,610	12,203
Telephone and telegraph equipment	46,909	71,414	32,006	52,602	3,491	5,043
Television, radio sets and phonographs	205,375	231,949	83,804	100,567	472	806
Electronic tubes and semi-conductors	90,344	130,220	78,087	104,821	2,939	3,905
Other telecommunication and related equipment	298,172	378,423	194,521	246,547	19,720	23,896
Other equipment and tools	1,685,144	1,992,051	1,362,996	1,605,449	72,396	86,646
Air conditioning and refrigeration equipment	113,610	136,830	93,619	119,062	2,872	3,656
Electric lighting fixtures and portable lamps	65,987	83,703	52,292	65,525	1,037	1,219
Switchgear and protective equipment	32,862	41,015	16,249	23,677	4,243	8,132
Industrial control equipment	36,191	45,549	30,806	37,761	2,329	3,224
Other electric lighting distribution equipment	84,254	93,736	58,526	68,579	6,891	5,387
Auxiliary electric equipment for engines	89,208	88,512	83,206	79,281	2,553	3,109
Electrical property measuring instruments	39,011	44,864	30,797	35,550	4,221	4,266
Miscellaneous measuring, controlling instruments	61,307	72,420	54,538	64,067	2,526	2,712
Medical and related equipment	46,954	58,377	40,827	49,945	1,502	1,718
Navigation equipment	11,557	15,632	10,368	14,337	487	457
Other measuring, laboratory equipment, etc.	162,682	180,944	125,530	141,144	6,279	6,048
Safety and sanitation equipment	38,642	45,644	35,498	41,968	1,825	1,785
Service industry equipment	43,210	53,337	39,660	48,712	1,026	1,178
Furniture and fixtures	65,670	103,435	39,999	64,950	2,013	3,016
Hand tools and cutlery	97,977	127,763	69,129	92,465	8,441	10,388
Electronic computers	212,418	276,813	196,228	261,986	2,430	4,261
Other office machines and equipment	234,559	220,387	175,394	136,213	14,181	19,814
Miscellaneous equipment and tools	249,045	303,088	210,509	260,228	7,541	6,275

18.28 Imports into Canada from all countries, from the United States and from the United Kingdom, by section and commodity, 1972 and 1973 (thousand dollars) (concluded)

Section and commodity	All countries		United States		United Kingdom	
	1972	1973	1972	1973	1972	1973
Personal and household goods	832,786	1,020,523	226,565	299,749	92,602	103,421
Outerwear, except knitted	100,472	132,109	24,655	31,420	4,271	5,484
Outerwear, knitted	115,230	133,077	4,864	6,109	8,576	9,953
Other apparel and apparel accessories	71,839	89,953	16,987	26,132	6,184	6,692
Footwear	95,553	102,893	4,003	6,028	7,772	7,810
Watches, clocks, jewellery and silver-ware	54,749	76,621	13,949	18,912	8,383	9,788
Sporting and recreation equipment	62,064	83,306	29,774	40,190	4,262	4,512
Games, toys and children's vehicles	50,822	60,796	22,245	27,665	4,376	4,726
House furnishings	82,881	106,983	33,765	51,545	13,641	14,870
Kitchen utensils, cutlery and table-ware	95,004	110,053	29,954	34,077	23,401	26,436
Other personal and household goods	104,173	124,731	46,369	57,672	11,735	13,149
Miscellaneous end products	996,683	1,219,156	702,591	867,405	92,394	94,679
Medicinal and pharmaceutical products	94,474	109,855	51,400	62,387	14,288	14,923
Medical, ophthalmic, orthopaedic supplies	82,150	102,627	60,354	74,398	3,463	3,432
Newspapers, magazines and periodicals	74,419	81,010	65,947	71,383	2,691	1,352
Books and pamphlets	135,248	154,626	103,195	118,002	10,888	12,977
Other printed matter	67,828	81,246	59,229	69,349	3,041	4,713
Stationers' and office supplies	48,178	60,854	33,864	44,678	5,561	5,511
Unexposed photographic film and plates	64,032	75,221	29,015	36,096	23,498	25,738
Other photographic goods	157,022	207,286	117,962	152,601	5,722	4,557
Containers and closures	84,070	101,621	73,489	90,575	3,003	3,170
Other end products, inedible	189,262	244,811	108,137	147,936	20,239	18,305
SPECIAL TRANSACTIONS — TRADE	202,481	246,747	150,588	192,119	13,093	11,356
Total, imports	18,669,427	23,302,576	12,878,178	16,483,587	949,468	1,005,397

In this table a dash indicates that either there was no trade or the amount was less than \$500.

18.29 Domestic exports by section and stage of fabrication, selected years 1956-73 (million dollars)

Year	Stage of fabrication				Total
	Crude materials	Sect. II Food, feed, beverages and tobacco	Sect. III Crude materials, inedible	Sect. VI Special transactions — trade	
All countries					
1956	13.4	750.4	873.0	0.1	1,636.9
1961	66.9	865.5	1,195.4	4.3	2,131.9
1966	78.0	1,362.8	1,947.6	10.1	3,398.5
1971	67.3	1,377.0	3,263.7	12.0	4,720.0
1972	86.1	1,557.0	3,559.6	12.9	5,215.6
1973	144.7	2,066.1	5,019.1	7.2	7,237.1
United States					
1956	11.0	154.6	556.0	1	721.6
1961	61.1	130.0	694.9	3.5	889.5
1966	69.0	154.5	1,122.7	8.0	1,354.2
1971	55.9	204.3	1,734.8	11.6	2,006.6
1972	66.9	231.0	2,003.2	12.4	2,313.5
1973	117.8	291.2	2,733.6	7.0	3,149.7
United Kingdom					
1956	1	232.3	130.6	1	362.9
1961	0.2	179.7	204.5	0.1	384.5
1966	1	195.7	231.6	0.3	427.6
1971	0.2	197.6	333.0	1	530.8
1972	0.7	186.5	306.4	1	493.6
1973	1.4	215.7	311.7	1	528.9
	Fabricated materials				
	Sect. II Food, feed, beverages and tobacco		Sect. IV Fabricated materials, inedible	Sect. VI Special transactions — trade	Total
All countries					
1956	152.5	2,441.7	3.7		2,597.9
1961	138.7	2,777.3	0.4		2,916.4
1966	204.2	4,012.1	0.7		4,217.0
1971	238.3	5,796.8	0.1		6,035.2
1972	228.5	6,568.0	1		6,796.5
1973	337.7	8,194.1	0.1		8,531.9
United States					
1956	31.8	1,755.7	0.6		1,788.1
1961	33.8	1,760.5	0.1		1,794.4
1966	51.7	2,760.8	0.6		2,813.1
1971	72.3	3,912.1	0.1		3,984.5
1972	63.6	4,657.8	1		4,721.4
1973	119.0	5,697.8	1		5,816.8

18.29 Domestic exports by section and stage of fabrication, selected years 1956-73 (million dollars) (concluded)

Year	Stage of fabrication				
	Fabricated materials (concluded)				
	Sect. II Food, feed, beverages and tobacco	Sect. IV Fabricated materials, inedible	Sect. VI Special transactions — trade	Total	
United Kingdom					
1956	46.9	381.0	1	427.9	
1961	39.3	440.1	1	479.4	
1966	53.4	547.7	1	601.1	
1971	38.4	643.0	1	681.4	
1972	48.2	659.3	1	707.5	
1973	56.8	774.7	1	831.5	
	End products				
	Sect. II Food, feed, beverages and tobacco	Sect. V End products, inedible	Sect. VI Special transactions — trade	Total	Total, domestic exports
All countries					
1956	180.5	325.6	4.7	510.8	4,745.6
1961	193.7	505.6	7.2	706.5	5,754.8
1966	321.2	2,119.3	14.5	2,455.0	10,070.5
1971	429.7	6,193.2	18.5	6,641.4	17,396.6
1972	483.5	7,136.2	28.9	7,648.6	19,660.7
1973	604.1	8,308.1	38.1	8,950.3	24,719.3
United States					
1956	125.4	152.0	1.0	278.4	2,788.1
1961	134.3	283.7	5.2	423.2	3,107.1
1966	223.2	1,626.0	11.4	1,860.6	6,027.9
1971	323.8	5,354.8	13.5	5,692.0	11,683.1
1972	373.7	6,142.4	24.0	6,540.1	13,575.0
1973	451.3	7,161.3	32.8	7,645.4	16,611.9
United Kingdom					
1956	13.7	6.6	1	20.3	811.1
1961	19.3	26.1	0.1	45.5	909.4
1966	37.5	56.1	0.3	93.9	1,122.6
1971	42.7	124.6	0.3	167.7	1,379.9
1972	43.5	124.5	0.5	168.4	1,369.5
1973	60.1	160.6	0.8	221.5	1,581.9

¹Less than \$50,000.**18.30 Imports by stage of fabrication and section, selected years 1956-73 (million dollars)**

Year	Stage of fabrication				
	Crude materials				
	Sect. I Live animals	Sect. II Food, feed, beverages and tobacco	Sect. III Crude materials, inedible	Sect. VI Special transactions — trade	Total
All countries					
1956	5.4	279.3	825.8	7.5	1,118.0
1961	7.0	327.3	763.5	11.4	1,109.3
1966	12.9	422.1	1,023.2	40.8	1,499.0
1971	39.3	558.0	1,321.7	—	1,919.0
1972	44.7	672.7	1,539.8	—	2,257.2
1973	137.1	911.9	2,016.3	—	3,065.2
United States					
1956	4.8	144.1	401.7	7.1	557.8
1961	6.5	187.4	335.9	10.2	540.0
1966	12.2	242.7	506.4	35.8	797.2
1971	35.9	301.3	577.0	—	914.2
1972	40.5	374.0	643.6	—	1,058.0
1973	131.0	540.2	780.2	—	1,451.4
United Kingdom					
1956	0.4	2.5	28.8	0.2	31.9
1961	0.1	4.6	28.1	0.5	33.4
1966	0.1	8.2	31.6	1.7	41.7
1971	0.2	5.6	24.3	—	30.2
1972	0.8	5.4	24.7	—	30.9
1973	1.5	6.8	33.1	—	41.5

18.30 Imports by stage of fabrication and section, selected years 1956-73 (million dollars) (concluded)

Year	Stage of fabrication			Total
	Fabricated materials	Sect. IV Fabricated materials, inedible	Sect. VI Special transactions — trade	
All countries				
1956	114.8	1,528.1	26.7	1,669.6
1961	129.5	1,395.8	31.5	1,556.7
1966	145.0	2,233.1	70.5	2,448.6
1971	207.0	3,140.2	2.5	3,349.7
1972	257.7	3,579.0	3.1	3,839.8
1973	360.0	4,281.5	3.8	4,645.3
United States				
1956	37.1	1,096.3	17.4	1,150.9
1961	45.5	943.1	18.0	1,006.7
1966	64.1	1,481.8	61.0	1,606.8
1971	67.4	1,980.6	0.3	2,048.3
1972	78.6	2,233.5	0.3	2,312.4
1973	125.4	2,824.0	0.5	2,949.9
United Kingdom				
1956	5.3	196.5	4.4	206.1
1961	8.1	160.5	4.5	173.1
1966	5.5	175.2	3.0	183.6
1971	6.3	220.4	0.2	226.9
1972	5.3	233.6	0.2	239.1
1973	7.7	252.5	0.2	260.4
	End products			Total, imports
	Sect. II Food, feed, beverages and tobacco	Sect. V End products, inedible	Sect. VI Special transactions — trade	Total
All countries				
1956	129.5	2,590.1	39.8	2,759.4
1961	164.8	2,879.6	58.2	3,102.6
1966	224.7	5,483.4	210.7	5,918.8
1971	352.6	9,832.2	164.6	10,349.4
1972	425.4	11,947.7	199.4	12,572.4
1973	572.5	14,776.6	243.0	15,592.0
United States				
1956	70.2	2,214.9	37.6	2,322.8
1961	87.2	2,178.2	52.0	2,317.3
1966	95.3	4,451.6	184.7	4,731.6
1971	135.8	7,732.8	119.5	7,988.1
1972	162.4	9,195.1	150.3	9,507.8
1973	195.5	11,695.2	191.6	12,082.3
United Kingdom				
1956	17.9	219.4	1.1	238.4
1961	21.0	388.2	2.5	411.7
1966	30.5	380.1	8.8	419.4
1971	43.9	525.9	10.4	580.2
1972	49.2	617.4	12.9	679.5
1973	53.6	638.8	11.2	703.6

18.31 Percentage growth rates of domestic exports and imports in current dollars

Item and period	All countries			Total	United States Total
	Crude materials	Fabricated materials	End products		
Domestic exports					
1956-61	5.3	2.3	6.5	3.9	2.2
1961-66	9.3	7.4	24.9	11.2	13.3
1966-71	6.6	7.2	19.9	10.9	13.2
1971-73	21.4	17.3	14.9	17.5	17.6
1956-73	8.7	7.0	16.8	9.7	10.5
Imports					
1956-61	-0.2	-1.4	2.3	0.8	-0.8
1961-66	6.0	9.1	12.9	10.7	12.3
1966-71	4.9	6.3	11.2	9.2	8.6
1971-73	23.4	16.3	20.5	20.0	20.4
1956-73	5.9	6.0	10.2	8.4	8.3

Sources

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Chapter 19

Banking, finance and insurance

19.1 Banking

19.1.1 The Bank of Canada

Canada's central bank, the Bank of Canada, began operations on March 11, 1935, under the terms of the Bank of Canada Act, 1934, which charged it with the responsibility for regulating "credit and currency in the best interests of the economic life of the nation", and conferred on it specific powers for discharging this responsibility. Through the exercise of these powers, the Bank broadly determines the combined total of the most common forms of Canadian money held by the community — chartered bank deposits and currency. Revisions to the Bank of Canada Act, 1934, were made in 1936, 1938, 1954 and 1967, and are included in RSC 1970, c.B-2.

The provisions of the Bank of Canada Act enable the central bank to determine the total amount of cash reserves available to the chartered banks as a group and in that way to control the rate of expansion of the total assets and deposit liabilities of the banking system as a whole. The Bank Act, which regulates the operation of the chartered banks, requires that each chartered bank maintain a stipulated minimum average amount of cash reserves, calculated as a percentage of its Canadian dollar deposit liabilities, in the form of deposits at the Bank of Canada and holdings of Bank of Canada notes. The minimum cash reserve requirement, which came into effect under the legislation beginning February 1, 1968, is 12% of demand deposits and 4% of other deposits. The ability of the chartered banks as a group to expand their total assets and deposit liabilities is therefore limited by the total amount of cash reserves available. An increase in cash reserves will encourage the banks as a group to expand their total assets (which consist chiefly of loans and marketable securities) with a concomitant increase in their deposit liabilities; a decrease in cash reserves will bring about a decline in their total assets and deposit liabilities as they seek to restore their cash reserve ratios.

The chief method by which the Bank of Canada alters the level of cash reserves of the chartered banks over time, and through them the total of chartered bank deposits, is by purchases and sales of government securities. Payment by the central bank for the securities it purchases in the market adds to the cash reserves of the chartered banks as a group and puts them in a position to expand their assets and deposit liabilities. Conversely, payment to the central bank for securities it sells causes a reduction in the cash reserves of the chartered banks and requires them to reduce their holdings of assets and deposit liabilities.

The influence the Bank of Canada exerts on credit conditions (i.e. on interest cost and other terms of borrowing in financial markets) stems from its ability to limit the growth of bank credit and of the community's holdings of bank deposits and currency. The growth rate of the banking system is one of the factors exerting an important influence on the level of interest rates and other terms of access to credit prevailing in financial markets generally. Current credit conditions (and expectations about future trends in such conditions) in turn have an influence on business and household decisions to spend or to save. Many other factors have an important effect on spending decisions and the behaviour of the economy is subject to such influences as economic and financial developments abroad; the investment, price and wage policies of business firms in Canada; and the character of public policies at all levels of government with regard to expenditure and taxation. In using the powers at its disposal, the Bank attempts to bring about credit conditions appropriate to both domestic and external conditions. Its operations must be based, not on any simple mechanical formula, but rather on continuous observation and appraisal of the constantly changing prospects for the economy as reflected in the complex pattern of economic and financial developments.

In a technical sense, the powers that the central bank possesses allow it to exert a strong influence over economic activity but, in practice, the range through which credit conditions can be permitted to vary is necessarily limited. Changes in credit conditions in Canada affect the position of some groups in the economy much more than that of others, and this uneven impact is bound to inhibit the central bank's operations. Furthermore, interest rates in Canada cannot change greatly in relation to those abroad without producing large capital movements

which might complicate Canada's international payments position. These considerations suggest that monetary policy must be used in appropriate combination with other public economic policies in order to help achieve national economic goals.

Although the Bank of Canada has the power to determine the rate of growth of the combined total of currency and chartered bank deposits, it has no means of determining how much of this total is held in the form of currency and how much in the form of chartered bank deposits. This depends entirely on the preferences of the public, since bank deposits can be converted freely into notes and coin and back again.

Although the cash reserve system in Canada — which is similar to that in a number of other countries — enables the central bank to determine within broad limits the total amount of chartered bank assets and deposit liabilities, the Bank of Canada leaves the allocation of bank and other forms of credit to the private sector of the economy. Each chartered bank is free to attempt to gain as large a share as possible of the total cash reserves available by competing for deposits and to decide what proportion of its funds to invest in particular kinds of securities and in loans to particular types of borrowers. The influence of the central bank — based in essence on its power to expand or contract chartered bank cash reserves through its market purchases or sales of securities — is both indirect and impersonal and is brought to bear on financial conditions generally through the chartered banks and the numerous inter-connected channels of the capital market.

The Bank may buy or sell securities issued or guaranteed by Canada or any province, short-term securities issued by Britain, treasury bills or other obligations of the United States and certain types of short-term commercial paper. The Industrial Development Bank Act authorizes the Bank to purchase securities issued by that institution. The Bank may buy or sell gold, silver, nickel and bronze coin, or any other coin, and gold and silver bullion as well as foreign exchange and may accept non-interest-bearing deposits from the Government of Canada, the government of any province, any chartered bank and any bank regulated by the Quebec Savings Bank Act. The Bank may open accounts in other central banks; accept deposits from other central banks, the International Monetary Fund, the International Bank for Reconstruction and Development, and any other official international financial organization; and pay interest on such deposits. The Bank does not accept deposits from individuals nor does it compete with the chartered banks in the commercial banking field. It acts as the fiscal agent for the Government of Canada in the payment of interest and principal and generally in respect of the management of the public debt of Canada. The sole right to issue paper money for circulation in Canada is vested in the Bank.

The Bank of Canada may require the chartered banks to maintain, in addition to the legal minimum cash reserve requirement mentioned above, a secondary reserve which the Bank may vary within certain limits. The secondary reserve, which consists of cash reserves in excess of the minimum requirement, treasury bills and day-to-day loans to investment dealers, cannot be more than 6% of total deposits when first introduced nor can it exceed 12%; effective January 1972, the required level was 8%. In the event the Bank wishes to introduce or increase the secondary reserve requirement, one month's notice to the chartered banks is required; the amount of any increase in the requirement cannot exceed 1% a month. In the case of a lowering of the secondary reserve requirement, however, the percentage change in any one month is not restricted.

The Bank of Canada may make loans or advances for periods not exceeding six months to chartered banks, or to banks to which the Quebec Savings Bank Act applies, on the pledge of certain classes of securities. Loans or advances may be made under certain conditions and for limited periods to the Government of Canada or of any province. The Bank of Canada is required to make public at all times the minimum rate at which it is prepared to make loans or advances; this rate is known as the bank rate. From November 1, 1956 until June 24, 1962, the bank rate was established weekly at a fixed margin of one quarter of 1% above the latest weekly average tender rate for 91-day treasury bills. Bank rates since June 24, 1962 have been fixed from time to time and are given in Table 19.1. The rate as at April 1, 1974 was 8.25% per annum.

From June 24, 1962 to November 12, 1970 the money-market rate — the rate at which the Bank of Canada is prepared to enter into purchase and resale agreements with money-market dealers — was either one quarter of 1% above the average rate on 91-day treasury bills at the preceding weekly tender or the bank rate, whichever was lower; since November 12,

1970 the minimum rate is the bank rate less three quarters of 1%.

Assets and liabilities of the Bank of Canada at December 31, 1971-73 are shown in Table 19.2. The Bank is not required to maintain gold or foreign exchange reserves against its liabilities.

Prior to the 1967 amendment of the Bank of Canada Act, there existed some uncertainty about the exact relationship between the central bank and the government. The changes in the Bank of Canada Act in 1967 were designed to clarify this matter. They provide for regular consultation between the Governor of the Bank and the Minister of Finance as well as for a formal procedure whereby, in the event of a disagreement between the government and the Bank which cannot be resolved, the government may, after further consultation has taken place, issue a directive to the Bank as to the monetary policy that it is to follow. Any such directive must be in writing, it must be in specific terms, and it must be applicable for a specified period. It must be published immediately in the *Canada Gazette* and tabled in Parliament. The amendment makes it clear that the government must take the ultimate responsibility for monetary policy and it provides a mechanism for that purpose but the central bank is in no way relieved of its responsibility for monetary policy and its execution.

The Bank is under the management of a Board of Directors composed of a Governor, a Deputy Governor and twelve directors. The Governor and Deputy Governor are appointed for terms of seven years each by the directors, with the approval of the Governor in Council. The directors are appointed by the Minister of Finance, with the approval of the Governor in Council, for terms of three years each. The Deputy Minister of Finance is a member of the Board but does not have the right to vote. There is an Executive Committee of the Board composed of the Governor, the Deputy Governor, two directors and the Deputy Minister of Finance (who is without a vote); this Committee has the same powers as the Board except that its decisions must be submitted to the Board at its next meeting. In addition to the Deputy Governor who is a member of the Board, there may be one or more Deputy Governors appointed by the Board of Directors to perform such duties as are assigned by the Board.

The head office of the Bank is in Ottawa. It has agencies in Halifax, Saint John, Montreal, Ottawa, Toronto, Winnipeg, Regina, Calgary and Vancouver and is represented in St. John's and Charlottetown.

The Industrial Development Bank, a federal Crown corporation and a subsidiary of the Bank of Canada, was established by Act of Parliament in 1944 to provide capital assistance to develop new businesses and to finance the expansion programs of existing small- and medium-sized businesses which are unable to obtain financing elsewhere in Canada under reasonable conditions and terms.

The President of the Industrial Development Bank (IDB) is the Governor of the Bank of Canada and the directors are the directors of the Bank of Canada and the Deputy Minister of Industry, Trade and Commerce. The authorized capital of the IDB is \$75 million and it may also raise funds by the issue of bonds and debentures provided that its total direct liabilities and contingent liabilities in the form of guarantees and underwriting agreements do not exceed 10 times the aggregate of its paid-up capital and reserve fund. The total amount of commitments of the IDB in the form of loans, guarantees, etc., in excess of \$200,000 each, may not exceed \$200 million. Assets and liabilities of the IDB are given in Table 19.3.

The purpose of the IDB is to promote the economic welfare of Canada by ensuring the availability of credit to industrial enterprises which may reasonably be expected to prove successful, by supplementing the activities of other lenders and by providing financial assistance to industry with particular emphasis in meeting the needs of small enterprises. The IDB may, among other things, lend money, guarantee loans to other lenders and purchase shares of a corporation with a view to the resale of the shares. The IDB can lend to virtually any industry, trade or other business undertaking of any kind and meet any sort of financial need.

The IDB Act stipulates that the amount invested or to be invested in the industrial enterprise by persons other than the IDB should be such as to afford it reasonable protection. A loan proposal is then assessed on the grounds of its business viability and creditworthiness.

Through its advisory services program, the IDB helps promote good management practices in small businesses. A series of booklets on various aspects of business management are distributed without charge and seminars on business management are conducted by the IDB in smaller communities across Canada.

The IDB has 67 branches across Canada located in the following centres: St. John's, Corner Brook, Sydney, Halifax, Charlottetown, Moncton, Saint John, Sept Îles, Rimouski, Chicoutimi, Quebec, Sherbrooke, Granby, Trois-Rivières, Longueuil, St-Léonard, Montreal (2), St-Laurent, St-Jérôme, Ottawa, Hull, Rouyn-Noranda, Kingston, Oshawa, Toronto (2), Oakville, Barrie, St. Catharines, Hamilton, Kitchener-Waterloo, Owen Sound, Stratford, London, Chatham, Windsor, Timmins, Sudbury, Sault Ste Marie, Thunder Bay, Kenora, Winnipeg, Brandon, Regina, Saskatoon, Lethbridge, Calgary, Red Deer, Edmonton, Grande Prairie, Yellowknife, Whitehorse, Cranbrook, Kelowna, Kamloops, Chilliwack, Prince George, Terrace, New Westminster, Burnaby, North Vancouver, Vancouver, Richmond, Campbell River, Nanaimo and Victoria.

19.1.2 Currency

The development by which bank notes became the chief circulating medium in Canada prior to 1935 is described in the *1938 Canada Year Book* pp 900-905. Those features of the development which then became permanent are outlined in the *1941 Canada Year Book* pp 809-810.

When the Bank of Canada commenced operations in 1935 it assumed liability for Dominion notes outstanding. These were replaced in public circulation and partly replaced in cash reserves by the Bank's legal tender notes in denominations of \$1, \$2, \$5, \$10, \$20, \$50 and \$100. Deposits of chartered banks at the Bank of Canada completed the replacement of the old Dominion notes of \$1,000 to \$50,000 denomination that had previously been used as cash reserves. The chartered banks were required under the Bank Act of 1934 to reduce gradually the issue of their own bank notes during the years 1935-45 to an amount not in excess of 25% of their paid-up capital on March 11, 1935. Bank of Canada notes thus replaced chartered bank notes as the issue of the latter was reduced. Further restrictions introduced by the 1944 revision of the Bank Act cancelled the right of chartered banks to issue or re-issue notes after January 1, 1945, and in January 1950 the chartered banks' liability for such of their notes issued for circulation in Canada as then remained outstanding was transferred to the Bank of Canada in return for payment of a like sum to the Bank of Canada.

Bank of Canada note liabilities for the years 1971-73 are given in Table 19.4. Note circulation in public hands as at December 31, 1973 amounted to \$4,620.2 million, compared to \$4,055.7 million in 1972 and \$3,505.9 million in 1971.

Bank of Canada statistics concerning currency and chartered bank deposits are given in Table 19.5.

19.1.3 Coinage

Under the Currency and Exchange Act (RSC 1970, c.C-39), gold coins may be issued in the denomination of \$20 (nine tenths fine or millesimal fineness 900); subsidiary coins in denominations of \$1, 50 cents, 25 cents, 10 cents (five tenths fine or millesimal fineness 500, or pure nickel); pure nickel five-cent coins; and bronze (copper, tin and zinc) one-cent coins. Provision is made for the temporary alteration of composition in the event of a shortage of prescribed metals. A tender of payment of money in coins is a legal tender in the case of gold coins issued under the authority of Section 4 of the Currency and Exchange Act for the payment of any amount; in the case of silver coins for the payment of an amount up to \$10; nickel coins for payment up to \$5; and bronze coins up to 25 cents.

Table 19.6 gives figures for the value of Canadian coins in circulation. Receipts of gold bullion at the Royal Canadian Mint and bullion and coinage issued are given in Table 19.7.

The Ottawa Mint, established as a branch of the Royal Mint under the (Imperial) Coinage Act of 1870, was opened on January 2, 1908. On December 1, 1931, it became the Royal Canadian Mint and operated as a branch of the Department of Finance. The Mint was established as a Crown (agency) corporation in 1969 to allow for a more industrial type of organization and for flexibility in producing coins of Canada and other countries; buying, selling, melting, assaying and refining gold and precious metals; and producing medals, plaques and other devices.

Financial and budgeting arrangements are similar to those of other Crown companies carrying on industrial or commercial operations. Loans are made from the Consolidated Revenue Fund for operating and capital expenses, with the total outstanding at any time limited to \$35 million. Provision is made for loans for temporary purposes and a reserve is es-

tablished against losses. Operations are conducted with the aim of making a small profit.

On December 16, 1971, a decision was made by the Cabinet to locate a new plant for the production of coin for general circulation in the Winnipeg area of Manitoba. Work on the site was begun in early October 1972 and the plant was expected to be in operation toward the end of 1974.

The Olympic (1976) Act, assented to on July 27, 1973, authorized the issue of silver coins in the denominations of \$5 and \$10 during the years 1973, 1974, 1975 and 1976 to commemorate the 1976 Summer Olympic Games. A tender of payment of money in Olympic coins is a legal tender for payment of an amount not exceeding \$20.

19.1.4 Chartered banks

Canada's commercial banking system consists of 10 privately owned banks. Eight have been in operation for many years, one commenced operations in July 1968 and another in January 1973. At the end of December 1973, these banks operated 6,701 banking offices in Canada and 266 abroad. Canadian chartered banks engage in a very wide range of activities; they accept various types of deposits from the public including accounts payable on demand, both chequing and non-chequing, notice deposits and fixed-term deposits. The banks, in addition to holding a portfolio of securities, make loans under a wide variety of conditions for commercial, industrial, agricultural and consumer purposes. They also deal in foreign exchange, receive and pay out bank notes, provide safekeeping facilities and perform a variety of other services. For the most part, these operations are carried out in Canada by the extensive network of bank branches. The head offices of the banks confine their activities largely to general administration and policy-making functions, the management of the banks' investment portfolio and related matters. A detailed account of the branch banking system in Canada is given in the *1967 Canada Year Book*, pp 1126-1128.

All banks operating in Canada are chartered (i.e. licensed) by Parliament under the terms of the Bank Act. The Act regulates certain internal aspects of bank operations such as the auditing of accounts, the issuing of stock, the setting aside of reserves and similar matters. In addition, the Bank Act regulates the banks' relationship with the public, the government and the Bank of Canada.

The Bank Act has been revised at approximately 10-year intervals; the most recent revision was enacted by Parliament early in 1967 and came into effect on May 1 of that year. Increased competition and flexibility in the Canadian banking system were reflected in various new Bank Act provisions. These imposed certain restrictions on corporate and other relationships between banks and other financial institutions, while removing certain existing restrictions on the banks' operations which had placed them at some competitive disadvantage in recent years compared with their principal financial competitors.

In the past, various forms of intercorporate financial relationships between chartered banks and other financial enterprises had developed in Canada. In some instances these involved investment by banks in the shares of these enterprises, and vice versa; in others the relationship involved interlocking directorships. These practices are severely restricted under the terms of the 1967 Bank Act, which limits bank ownership of any Canadian corporation to 10% of the voting shares and also provides that no more than one fifth of the directors of any company may become directors of a bank. In addition, after a two-year period a director of a trust or mortgage loan company which accepts deposits from the public may not be appointed or elected a director of a bank. In order to ensure that competition is not curtailed by agreements among the banks on interest rates to be paid on deposits or charged for loans, the 1967 Bank Act prohibits the making of such agreements (except with the consent of the Minister of Finance). At the same time the provision that was formerly in the Bank Act limiting to 6% the interest rate which chartered banks could charge on loans was abolished effective January 1, 1968. Under the 1967 Bank Act, the determination of interest rates on loans and deposits is left to market forces.

The 1967 Bank Act also granted the banks new mortgage-lending powers, permitting them to charge current rates of interest on mortgage loans under the National Housing Act, and also, for the first time, to make conventional residential mortgage loans. In the case of conventional residential mortgages, the amount of an individual mortgage cannot exceed 75% of the appraised value of the property. The maximum amount of a bank's assets to be held in the form of conventional residential mortgages must not be more than 10% of the bank's

Canadian dollar deposit liabilities plus debentures. The banks have also been given authority to issue their own debentures with an original term to maturity of at least five years; such securities are not subject to reserve requirements and rank in priority after deposit liabilities. The amount of debentures that any bank may have outstanding is limited by restricting the increase per annum to 10% of the paid-up capital and rest fund and an upper limit of one half of the bank's paid-up capital and rest fund.

The amendments to the Bank Act in 1967 contained a number of revisions respecting the ownership of Canadian chartered banks. No individual or associated shareholders may vote more than 10% of a bank's total shares outstanding and, if more than 25% of a bank's shares are owned by non-residents, the total outstanding liabilities of the bank may not exceed 20 times its authorized capital stock.

The Bank Act also stipulates the minimum statutory cash reserve requirement that the chartered banks must observe. The minimum amount of Bank of Canada notes and deposits each bank must hold as cash reserves was changed in a series of monthly steps from 8% of all Canadian dollar deposits under the old Bank Act to 12% of demand deposits and 4% of other deposits as at February 1968. In addition, the Bank of Canada was given stand-by powers to require the banks to hold a "secondary reserve" which would consist of cash in excess of their statutory requirements, holdings of treasury bills and day-to-day loans to investment dealers. When initially introduced, this secondary reserve cannot exceed 6% of a bank's deposit liabilities. Thereafter it may be increased in monthly steps of 1% to a maximum of 12%. The Bank of Canada may reduce or remove such a secondary reserve at any time. Effective April 1968, the required level was 7%; effective June 1969, it was increased to 8% and, effective July 1970, to 9%; effective December 1971, it was reduced to 8.5% and to 8% effective January 1972.

Chartered bank financial statistics for recent years are given in Tables 19.8 - 19.12; month-end data are available in the *Bank of Canada Review*.

Branches of chartered banks. Although there are fewer chartered banks now than at the beginning of the century, there has been a great increase in the number of branch banking offices. As a result of amalgamations, the number of banks declined from 34 in 1901 to 10 in 1931, and remained at that figure until the incorporation of a new bank — The Mercantile Bank of Canada — in 1953 brought the total to 11. Since then the amalgamation in 1955 of the Bank of Toronto and the Dominion Bank as the Toronto Dominion Bank, the amalgamation of Barclays Bank (Canada) with the Imperial Bank of Canada in 1956 and the amalgamation of the Canadian Bank of Commerce and the Imperial Bank of Canada as the Canadian Imperial Bank of Commerce on June 1, 1961 reduced this number to eight. The Bank of British Columbia was granted a charter by Parliament in December 1966 and commenced operations in July 1968. The Unity Bank of Canada was granted a charter in November 1972 and commenced operations in 1973, increasing the number of banks to 10. The number of branches of chartered banks in each province periodically from 1920 to 1973 is given in Table 19.13.

Branches of individual Canadian chartered banks by province as at December 31, 1972 and 1973 and outside Canada as at December 31, 1973 are given in Tables 19.14 and 19.15.

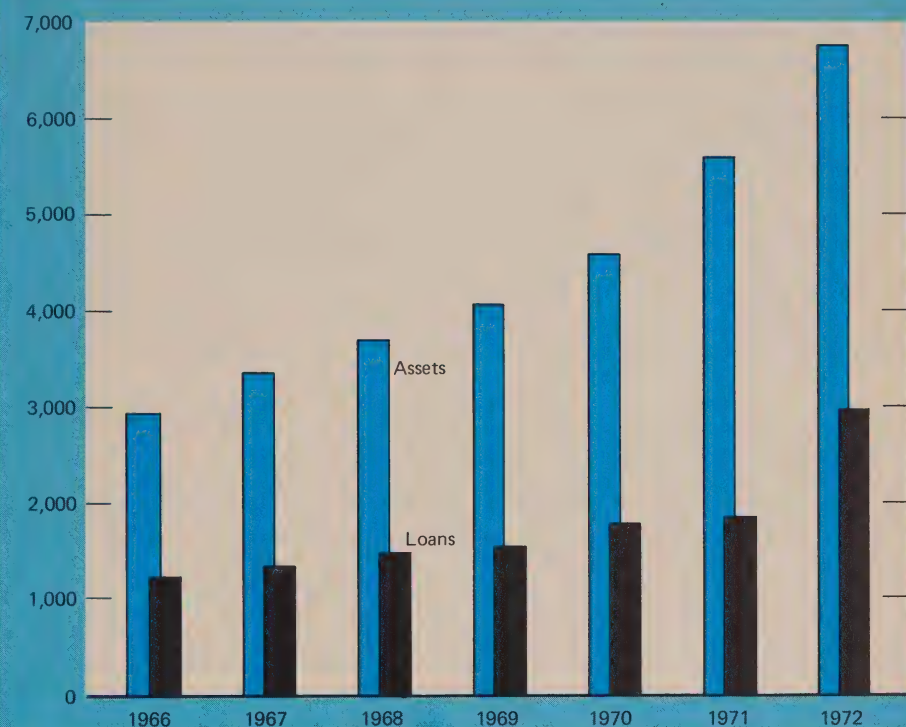
Cheque payments. Historical data on a monthly basis are available from 1924 on the amount of cheques charged to customer accounts in 35 major clearing centres. The value of payments rose steadily throughout the country from 1924 to 1929. From 1929 to 1932 the value declined sharply and thereafter fluctuated within rather narrow limits until the outbreak of World War II. Since 1939, the total value of cheques cashed in these centres has increased steadily (see Table 19.16). The value of cheques cashed in 50 clearing centres during 1972 reached a high of \$1,065,933.2 million, an increase of 15.9% above the value of \$919,462.3 million for 1971. All five geographic regions showed increases, with Ontario recording a gain of 16.9%, the Prairie Provinces 10.3%, the Atlantic Provinces 9.4%, Quebec 16.0% and British Columbia 21.1%. Payments in the two leading centres also reached all-time highs, Toronto advancing 19.0% and Montreal 15.6% over 1971.

19.1.5 Other banking institutions

In addition to the savings departments of the chartered banks and of trust and loan companies, there are provincial government savings banking institutions in Ontario and Alberta, and the Montreal City and District Savings Bank in Quebec, established under federal legis-

Credit union assets and loans to members, 1966-72

Millions of dollars



lation and reporting monthly to the Department of Finance. Co-operative credit unions also encourage savings and extend small loans to their members.

Province of Ontario Savings Office. The establishment of the Province of Ontario Savings Office was authorized by the Ontario Legislature at the 1921 Session and the first branches were opened in March 1922. Interest at the rate of 7¼% per annum (as at January 1, 1974), compounded half-yearly, is paid on accounts; deposits are repayable on demand. Total deposits as at December 31, 1973 were \$191 million and the number of depositors was approximately 71,000; 21 branches are in operation throughout the province.

Province of Alberta Treasury Branches. Established in 1938 by the Treasury Branches Act, the system operates 81 branches, four sub-branches and 78 agencies throughout the province. As at March 31, 1973, deposits from customers totalled \$336.0 million while advances to individuals, merchants, corporations and municipal bodies totalled \$205.4 million. Profits for the year ended March 31, 1973, before allowances for reserves, were \$4.1 million. Of this amount \$2.6 million was transferred to the general revenue of the province. Financial services include current accounts (non-interest bearing); regular (chequing) and super (non-chequing) savings, interest-bearing accounts; term deposits for terms ranging from 30 days to six years bearing competitive interest rates; agricultural loans, business loans, life-insured personal loans, mobile home financing, home improvement loans, small businessmen's loans and commercial and industrial mortgage loans.

The Montreal City and District Savings Bank was founded in 1846 and has operated under a federal charter since 1871. At October 31, 1973, it had a paid-up capital and reserve of \$24.8 million, savings deposits of \$743.2 million and total liabilities of \$786.9 million. Assets of a like amount included \$245.7 million, consisting of federal, provincial, municipal and other securities.

Credit unions. The first credit union in Canada was founded in Lévis, Que., in 1900 to promote thrift by encouraging saving and to provide loans to members who could not get credit elsewhere or could get it only at high interest rates. For many years growth was slow; in 1911, when the first figures were available, assets amounted to \$2 million and by 1940 they were only \$20 million. However, since that time there has been a spectacular increase. Assets of the Quebec credit unions amounted to over \$1,000 million at the end of 1964 and to over \$3,400 million at the end of 1972. In other provinces, the first credit union legislation was passed in Nova Scotia in 1932 followed by legislation in Manitoba and Saskatchewan in 1937 and in Ontario and British Columbia in 1938.

Credit unions are under provincial legislation. Almost all local offices in each province belong to central credit unions operating within the province either directly or through regional unions. There is a considerable difference between Quebec and the other provinces in the asset-holding of credit unions; Quebec credit unions have a large proportion of their investments in the form of mortgages and government bonds while in the other provinces they have a greater percentage in loans. The number of chartered credit unions in Canada at the end of 1972 was 4,351 which reported a total membership of 5.8 million and assets of \$6,761 million (Table 19.17). Quebec, with 3.2 million members and assets of \$3,438 million accounted for 55% and 51%, respectively, of total membership and total assets of all credit unions in Canada (Table 19.18).

Canadian credit unions in the 1962-72 decade have continued their steady growth. Loans granted by credit unions increased by 62.4% in 1972 to reach \$2,970 million, being a 339% increase over the corresponding figure of \$676 million in 1962. Assets at \$6,761 million increased by 304% and savings at \$6,222 million increased by 310% in the same comparison. Membership of 5.8 million represented 27% of the total population, compared with 2.9 million and 15%, respectively, in 1962. Assets, liabilities and members' equity of local credit unions in Canada are given in Table 19.19.

There were 20 central credit unions in 1972; these are organized as a type of centralized banking entity to serve the needs of their local credit unions members, mainly by accepting deposits of surplus funds from them and providing a source of funds for them to borrow when they cannot meet the demand for local loans. Most of the centrals also admit co-operatives as members. Total assets of the centrals increased by 56% to \$1,327 million and loans to members increased 30.1% to \$622 million over the previous year. The National Association of Central Credit Unions serves as the central organization for the provincial centrals.

19.2 Other financial institutions

19.2.1 Trust and mortgage companies

Trust and mortgage companies are registered with either the federal or provincial governments. They operate under the Loan Companies Act (RSC 1970, c.L-12) and the Trust Companies Act (RSC 1970, c.T-16, as amended) or under corresponding provincial legislation.

Trust companies operate as financial intermediaries in the same way as chartered banks or savings institutions. They are the only corporations in Canada with power to act as trustees for property interests and to conduct other fiduciary business. In this capacity they act as executors, trustees and administrators under wills or by appointment, as trustees under marriage or other settlements, as agents in the management of estates of the living, as guardians of minor or incapable persons, as financial agents for municipalities and companies, as transfer agents and registrars for stock and bond issues, as trustees for bond issues and, where so appointed, as authorized trustees in bankruptcies.

Trust and mortgage companies were established and grew rapidly under provincial legislation in the late 19th and early 20th centuries. Some companies were chartered by special Acts of Parliament but it was not until 1914 that the federal government began to regulate trust and mortgage companies registered under its Acts. In 1972 there were 23 federal trust companies and 14 federal mortgage companies. The Superintendent of Insurance examines these companies and also, by arrangement with the provinces, trust and mortgage companies incorporated in Nova Scotia and trust companies incorporated in New Brunswick and Manitoba. Companies must be licensed by each province in which they wish to operate.

Although there are many differences among the various federal and provincial Acts, the broad lines of the legislation are common. In their intermediary business the companies have

the power to borrow or, in the case of trust companies, to accept funds in guaranteed accounts subject to maximum permitted ratios of these funds to shareholders' equity. The funds may be invested in specified assets which include first mortgages on real property, government securities, and the bonds and equity of corporations having established earnings records, and the companies may grant loans on the security of such bonds and stocks and unsecured personal loans. Trust and mortgage companies are not required to hold specified cash reserves, as are the chartered and savings banks, but there are broadly defined "liquid asset" requirements in a number of the Acts.

In the 1920s trust and mortgage companies held about one half of the private mortgage business in Canada but their growth rate fell off sharply because of the effect on the mortgage business of the depression and World War II. In the years since then the strong demand for mortgage financing has led to sustained rapid expansion.

At the end of 1972 total assets net of investment in subsidiaries of trust companies in the Statistics Canada survey were \$8,550 million compared with \$7,403 million a year earlier, an increase of 15%. Trust companies have been putting a high proportion of their funds into these investments with the result that mortgages represented 64% of their total assets at the end of 1972. The trust companies had \$5,849 million in term deposits outstanding and \$1,980 million in demand deposits at the end of 1972, accounting for 91% of total funds. About one third of the demand or savings deposits were in chequable accounts. There is considerable variety among the trust companies and a few have developed a substantial short-term business, raising funds by issuing certificates for terms as short as 30 days and also operating as lenders in the money market. Nevertheless, the main business of the trust companies in their intermediary role is to channel savings into mortgages and other long-term investments. In addition, trust companies, as at December 31, 1972 had \$27,667 million under administration in estate, trust and agency accounts. Summary statistics are given in Tables 19.20 - 19.22.

Mortgage companies had assets before investment in subsidiaries of \$4,491 million at the end of 1972 compared with \$3,864 million a year earlier. Their holdings of mortgages amounted to \$3,766 million, or 79% of total assets. To finance their investments, these companies had borrowed \$2,903 million or 71% of their total funds by the sale of debentures and \$606 million from demand deposits.

More complete and up-to-date financial information may be found in quarterly financial statements published by Statistics Canada and the Bank of Canada, the reports of the Superintendent of Insurance on loan and trust companies and the reports of provincial supervisory authorities.

19.2.2 Small loans companies

Small loans companies and money-lenders are subject to the Small Loans Act (RSC 1970, c.S-11). This Act, first passed in 1939, sets maximum charges on personal cash loans not in excess of \$1,500 and is administered by the Department of Insurance. Lenders not licensed under the Act may not charge more than 1% per month. Those wishing to make small loans at higher rates must be licensed each year by the Minister of Finance under the Small Loans Act. The Act allows maximum rates, including charges of every kind, of 2% per month on unpaid balances not exceeding \$300, 1% per month on the portion of unpaid balances exceeding \$300 but not exceeding \$1,000 and one half of 1% on any remainder of the balance exceeding \$1,000. Loans in excess of \$1,500 are not regulated and lenders operating entirely above this limit and the larger loans of licensed lenders are thus exempt from the Act. Nor does the Act regulate charges for the instalment financing of sales. Prior to January 1, 1957, the Act applied only to loans of \$500 or less and the maximum interest charge allowed was 2% per month.

At the end of 1972, there were five small loans companies and 40 money-lenders licensed under the Act. Small loans companies are incorporated federally; money-lenders include provincially incorporated companies. Many of the small loans companies and money-lenders are affiliated with other financial institutions, principally Canadian sales finance companies and United States finance or loan companies. The affiliations with sales finance companies reflect the close relationship between instalment financing and the consumer loan business.

Statistics Canada publishes quarterly balance sheets for sales finance and consumer loan companies as a whole and does not attempt to distinguish the two groups within the industry (see *Financial institutions*, Catalogue No. 61-006).

The subsidiary small loans companies and money-lenders obtain most of their funds

through their parent companies. A few of the larger companies have supplemented their bank loans by selling short-term paper in the market but the amount has been small compared with the short-term market borrowing of the sales finance companies. The smaller independent companies rely mainly on their shareholders and on borrowing from the chartered banks.

Annual figures of assets and liabilities given in Table 19.23 for 1971 and 1972 are from the Department of Insurance report. More complete data on the business of licensed lenders are given in the report on small loans companies and money-lenders, published annually by the Superintendent of Insurance.

There was a marked decrease in 1972 compared with 1971 in the number and amount of small loans made by the combined companies. Small loans made to the public during the year numbered 867,060 as against 917,652 in 1971, a drop of about 6%; the amount of such loans decreased from \$573.2 million to \$539.4 million, a drop of about 6%. The average small loan made was \$622 in 1972 and \$625 in 1971. At the end of the year, small loans outstanding numbered 758,979 for an amount of \$383.1 million, or an average of \$505 per loan; comparable figures for 1971 were 875,366, \$439.6 million and \$502, respectively.

Gross profits of small loans companies and money-lenders before income taxes and before taking into account any increase or decrease in reserves for bad debts increased from \$59.8 million in 1971 (\$233,000 being the profit on small loans and \$59.6 million the profit on business other than small loans) to \$64.7 million in 1972 (\$344,000 being the loss on small loans and \$65.0 million the profit on other business).

19.2.3 Foreign exchange

The dollar was established as the official currency of the united provinces of Canada on January 1, 1858, and extended to cover the new Dominion by the Uniform Currency Act of 1870. The gold sovereign remained the standard for the Canadian dollar until 1910 when the currency was defined in terms of fine gold, making it the exact gold equivalent of the United States dollar. Both British and US gold coins, however, were legal tender in Canada during this period.

The 1870 Act defined the Canadian dollar as 15/73 of the British gold sovereign, that is, the par rate of exchange between the dollar and the pound sterling was fixed at \$4.866, making the Canadian currency the equivalent of the US dollar at parity. With minor variations the value of the pound sterling in Canada remained at this level until 1914.

For a complete description of the fluctuations between the Canadian and US dollars up to 1950 see the *1972 Canada Year Book* pp 1252-1254.

On September 30, 1950, the Minister of Finance announced that official fixed foreign exchange rates which had been in effect at varying levels since 1939 would be withdrawn effective October 2, and that the rate would henceforth be determined in the market for foreign exchange. This policy was carried out within the framework of exchange control until December 14, 1951, at which time the Foreign Exchange Control regulations were revoked by the Governor in Council, terminating the period of exchange control that had prevailed in Canada since 1939. The Foreign Exchange Control Act was repealed in 1952. On May 2, 1962, the Minister of Finance announced that the Canadian dollar was being stabilized at a fixed par value of 92½ cents in terms of United States currency. This action was taken with the concurrence of the International Monetary Fund (IMF) and, in accordance with the Articles of Agreement of that organization, the Government of Canada undertook to maintain the Canadian exchange rate with a margin of 1% on either side of the established par value.

On May 31, 1970, the Government of Canada announced a decision not to maintain the exchange rate of the Canadian dollar within the 1% parity band prescribed by the IMF for the time being. The movements of the US dollar in Canadian funds from January 1966 to December 1973 are shown in Table 19.24. Details of Canada's official international reserves and of undelivered contracts in US dollars are presented in Table 19.25.

19.2.4 The bond market

Sales of Canadian bonds. A net total of \$6,593 million was raised in the bond market by Canadian federal and junior governments and corporate borrowers in 1972. This amount was approximately equal to that raised in 1971 and provincial governments accounted for 46% of this total with net new issues of \$3,034 million.

The \$3,034 million worth of new issues of provincial governments included \$954 million

purchased by the Canada Pension Plan Investment Fund and about \$206 million through the Quebec Pension Plan. Net new issues of Government of Canada and municipal government bonds amounted to \$1,596 million and \$406 million, respectively. Corporations resorted to bond financing to the extent of \$1,502 million and other institutions had net new issues in 1972 of \$55 million.

Government of Canada bonds for terms of 10 years and over yielded 7.12% at the end of December 31, 1972 compared to 6.56% a year earlier. Comparable figures for provincials were 7.91% and 7.75% and for municipals, 8.18% and 7.85%.

There was an increase of \$207 million in finance and other short-term commercial paper in 1972, whereas the net amount raised through Canadian dollar bankers' acceptances decreased by \$13 million during the year. Yields on 90-day finance company paper at 5.15% at year-end in 1972 were appreciably higher than the 4.32% a year earlier.

Bonds outstanding. Total government and business bonds outstanding at the end of 1972 amounted to \$83,655 million, an increase of 8.5% over 1971 and 48% since 1967 (Table 19.26). In the 1967-72 period the largest increase was one of 73% in the bonded debt of provincial governments, including the issues held in the Canada Pension Plan Investment Fund and the Quebec Deposit and Investment Fund. Corporate bonds outstanding increased by 50.8% and municipal government bonds by 21.6%.

Distribution of bond holdings. Table 19.27 shows the estimated distribution as at December 31, 1972 of government and corporate bonds among the major purchasers of securities. Governments and the financial institutions specified in the Table held more than one half of the total bonds outstanding; the remainder was shared between non-residents and all other residents with 20% and 28% of the total, respectively. Of the 28%, however, almost one half consisted of Canada Savings Bonds. The largest identified holders of bonds were chartered banks with 12% of total, trustee pension plans with 8% and the Bank of Canada and life insurance companies with 7% each.

19.3 Insurance

Insurance business is transacted in Canada by about 900 companies and societies. All of them are licensed or registered by provincial insurance authorities; at the end of 1972, 432 were also registered by the federal Department of Insurance. Details of the classes of insurance each company or society is authorized to transact and statistical information may be found in the various published reports of the individual superintendents of insurance for the provinces. Financial statistics of the federally registered companies and fraternal benefit societies are published in the annual three-volume *Report of the Superintendent of Insurance for Canada*.

19.3.1 Life insurance

Total life insurance in force in Canada at the end of 1972 amounted to \$148,263 million of which about 93% was written by federally registered companies and fraternal benefit societies. The remainder was written by companies and societies that were provincially licensed only.

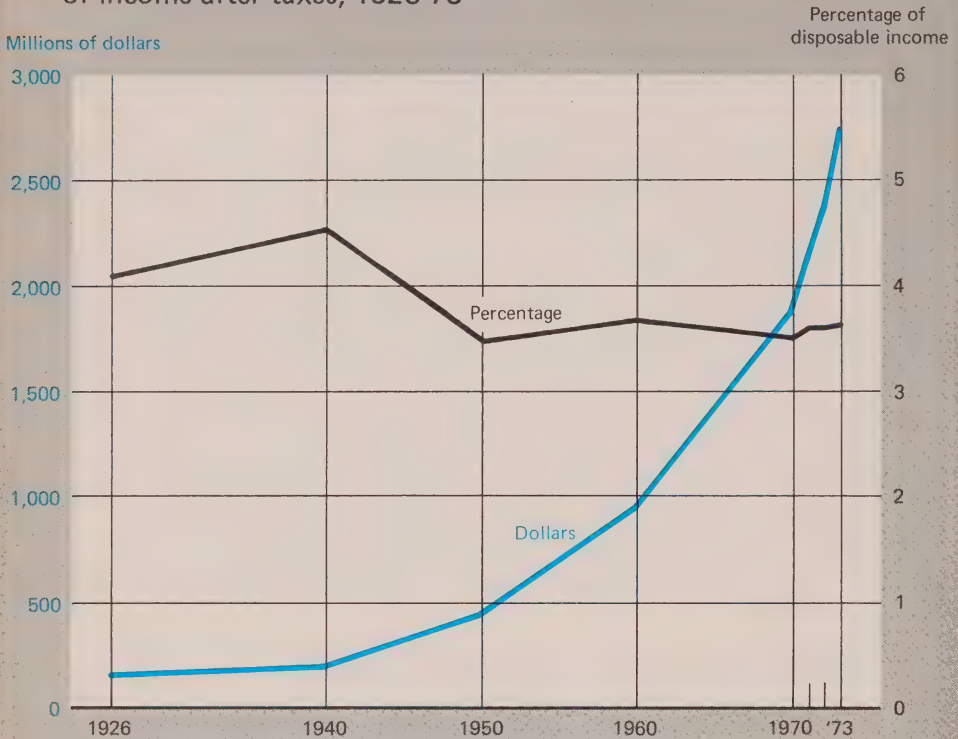
At the end of 1972, 135 companies were registered by the federal Department of Insurance to transact life insurance (52 Canadian, 12 British and 71 foreign). There were also 44 registered fraternal benefit societies (15 Canadian and 29 foreign).

The business of federally registered companies in Canada grew from \$91 million in 1880 to \$136,405 million at the end of 1972. Table 19.28 gives figures since 1880 for amounts of new insurance effected during the indicated year and an analysis of amounts in force at the end of the year among Canadian, British and foreign companies. Canadian companies reported an additional \$38,076 million amounts in force out of Canada at the end of 1972.

During 1972, there were over 700,000 new policies effected with a value of nearly \$18,000 million. Over 134,000 policies ceased by death or maturity with a value of over \$557 million. Tables 19.29 and 19.30 compare newly effected written business and total amounts in force for 1971 and 1972.

Net insurance premiums written in 1972 totalled \$1,511 million as compared with \$1,435 million in 1971. Net insurance claims (death, disability and maturity) totalled \$591 million in 1972 as compared with \$546 million in 1971. Table 19.31 gives a provincial analysis of the premium income in 1971 on a direct written basis.

Life insurance premiums as a percentage of income after taxes, 1926-73



Assets of Canadian life insurance companies on a world-wide basis totalled over \$18,000 million at the end of 1972. Assets of British companies applicable to business in Canada, on deposit with the Receiver General, vested in trust or secured by policies in Canada, totalled \$1,474 million. Those of foreign companies on a similar basis totalled \$2,824 million. In addition, there were assets under the control of the Chief Agent in Canada: \$78 million for British companies and \$106 million for foreign companies. The major categories of assets and related liabilities for 1971 and 1972 are given in Table 19.32.

Total income of Canadian companies amounted to \$3,670 million of which \$760 million was applicable to out-of-Canada business. The income of British companies applicable to Canadian business totalled \$329 million; and of foreign companies, \$648 million. The major sources of income and selected expenditures are given in Table 19.33.

For registered fraternal benefit societies, the certificates in force in Canada totalled \$1,459 million at the end of 1972, as compared to \$2,204 million at the end of 1971. Premiums written in Canada totalled \$25 million during 1972, of which \$17 million was applicable to Canadian societies and \$8 million to foreign societies. Canadian societies also reported \$63 million in premiums written out of Canada.

Preliminary figures, subject to change, showing the results of the insurance business in Canada for the year 1973 as transacted by insurance companies and fraternal societies registered with the Department of Insurance at Ottawa have now been compiled from the annual statements filed with the Department.

For life insurance companies, the net amount of life insurance effected in Canada during 1973 was \$19,407 million, an increase over 1972 of \$1,841 million or 10%. Of this amount, individual insurance amounted to \$11,092 million and group insurance to \$8,315 million. The

net amount of life insurance in force in Canada on December 31, 1973 was \$153,544 million, an increase over the corresponding amount in force at the end of 1972 of \$17,139 million or 13%. Of this amount, individual insurance amounted to \$72,570 million and group insurance to \$80,974 million. Canadian companies carried \$109,510 million, British companies \$7,671 million and foreign companies \$36,363 million.

The net insurance premium income for life insurance companies in Canada during 1973 was \$1,631 million and the net annuity considerations were \$962 million (including amounts received from policyholders for segregated funds). For the year 1972, these figures were \$1,511 million and \$743 million, respectively.

For fraternal societies, the net amount of life insurance in force in Canada on December 31, 1973 was \$1,566 million an increase over 1972 of \$107 million or 7%. Canadian societies carried \$1,344 million and foreign societies \$222 million.

19.3.2 Fire and casualty insurance

Direct premiums written in Canada for property insurance, automobile insurance, personal accident and sickness insurance, liability insurance and other forms of casualty insurance (excluding marine insurance) totalled \$2,791 million in 1972 of which about 82% was written by federally registered companies. The remainder was written by other provincially licensed companies including a large number of parish, municipal, county and farmers' mutuals, by Lloyd's and by provincial government insurance offices.

At the end of 1972, there were 358 companies (125 Canadian, 50 British and 183 foreign) registered by the federal Department of Insurance to transact other than life insurance. Of these, 105 were life companies whose non-life business was ordinarily only personal accident and sickness insurance.

For federally registered companies, the premium income on a net basis has increased from just under \$4 million in 1880 to \$2,251 million in 1972. An analysis of premiums and related total claims by class of insurance (including marine) is given in Table 19.34 and by province in Table 19.35.

Assets of Canadian fire and casualty companies on a world-wide basis totalled \$1,920 million at the end of 1972. Assets of British companies applicable to their in-Canada business, on deposit with the Receiver General or vested in trust, totalled \$412 million. Those of foreign companies on a similar basis totalled \$1,100 million. In addition, there were assets under the control of the Chief Agent in Canada; \$181 million for British companies and \$272 million for foreign companies. The major categories of the assets and their related liabilities for 1971 and 1972 are given in Table 19.36.

Underwriting experience in Canada over the past 10 years has ranged from a loss of \$67 million in 1963 to a gain of \$51 million in 1967. The loss for 1972 was nearly \$63 million.

Preliminary statistics for 1973. (See Table 19.37.) Property insurance net premiums written in Canada during 1973 were \$666 million, an increase over 1972 of \$80 million or 14%. The net premiums earned in 1973 were \$635 million and the net claims incurred were \$437 million indicating a claims ratio of 69%. The claims ratio for 1972 was 62%. Net premiums for automobile insurance written in Canada during 1973 were \$1,081 million, an increase over 1972 of \$100 million or 10%. The net premiums earned in 1973 were \$1,060 million and the net claims incurred were \$831 million, indicating a claims ratio of 78%. The claims ratio for 1972 was 75%.

Personal accident and sickness insurance net premiums written in Canada during 1973 were \$565 million, an increase over 1972 of \$87 million or 18%. The net premiums earned in 1973 were \$549 million and the net claims incurred were \$414 million indicating a claims ratio of 76%. The claims ratio for 1972 was 79%. Net premiums for liability insurance written in Canada during 1973 were \$125 million, an increase over 1972 of \$14 million or 13%. The net premiums earned in 1973 were \$119 million and net claims incurred were \$76 million indicating a claims ratio of 64%. The claims ratio for 1972 was 57%.

19.3.3 Fire losses

Fire losses in Canada reached \$254.3 million in 1972, an increase of \$18.2 million or 7.7% over losses reported in 1971. The total number of fires was 78,895, an increase of 6,166 or 8.5% over 1971 (Tables 19.38 - 19.39). This represents an average daily loss of \$696,620 from

216 fires. There were 830 deaths from fire in 1972, an increase of 91 or 12.3%. Of this total 258 or 31% were children.

19.3.4 Government insurance

19.3.4.1 Federal government insurance

In recent years, various insurance schemes have been adopted by the federal government or undertaken co-operatively by the federal and provincial governments. Information on unemployment insurance, hospital insurance, veterans insurance, export credit insurance, etc., will be found in the appropriate Chapters on Labour, Health, Incomes and social security, Merchandising and trade, etc.

Deposit insurance. The Canada Deposit Insurance Corporation was established in 1967 to provide, for the benefit of persons having deposits with a member of the Corporation, insurance against the loss of deposits up to a maximum of \$20,000 for any one depositor. Membership in the Deposit Insurance Corporation is obligatory for chartered banks, Quebec savings banks and those federally incorporated loan and trust companies that accept deposits from the public. Provincially incorporated loan and trust companies that accept deposits from the public are eligible to apply for membership if they have the consent of the province of incorporation. The definition of deposits, as set out in the general by-law of the Corporation, might be summarized as money received by a member institution that is repayable on demand or notice and money that is repayable on a fixed date not more than five years after the date on which the money is received. Deposits not payable in Canada or in Canadian currency are not insured.

19.3.4.2 Provincial government insurance

Manitoba. The Manitoba Public Insurance Corporation is a Crown corporation established under the Automobile Insurance Act. The Act was proclaimed on September 21, 1970, and the Corporation was created by order of the Lieutenant Governor in Council on September 29, 1970. The Act and its Regulations provide for the establishment of a universal, compulsory automobile insurance plan and of other plans of automobile insurance within the province.

The plan, known as Autopac, provides the following basic coverage on Manitoba-licensed motor vehicles: (1) bodily injury (including passenger hazard) and property damage liability to \$50,000; no-fault all-perils coverage with \$200 deductible (private passenger cars) and nil deductible for loss caused by fire, lightning, or theft of the entire vehicle; if a vehicle is stolen, the owner may be reimbursed for transportation expenses up to \$8 a day for up to 30 days; and (2) no-fault personal injury benefits (paid automatically without limiting the insured's right to seek a larger settlement); death benefits to a maximum of \$10,000; funeral expenses to a maximum of \$500; benefits up to \$6,000 for dismemberment, disfigurement, or impairment; loss-of-income payment of \$50 a week for total disability and \$25 a week for partial disability, beginning one week after disability; for a total disability, payments continue for the period during which the insured remains totally disabled, with no time limit, and for partial disability, payments continue up to 104 weeks.

Revenue for the plan comes from two sources — premiums on driver licences and premiums on vehicles. Premiums on driver licences recognize driver responsibility; a driver is allowed to accumulate five demerit points (based on driving infractions) before being assessed an additional driver-insurance premium. Premiums on vehicles are based on such factors as year, make, model, use and rating territory, based on the address of the vehicle owner.

The plan was inaugurated November 1, 1971 for an initial four-month period; thereafter, it operates concurrently with the 12-month vehicle registration period which is March 1 through the following February 28.

Saskatchewan. The Saskatchewan Government Insurance Office, a Crown corporation established by the Saskatchewan Government Insurance Act, 1944, commenced business in May 1945. It provides all types of insurance other than sickness and life. The aim of the legislation is to provide residents of the province with low-cost insurance designed for their particular needs. Rates are based on loss experience in Saskatchewan only and the surplus is invested, to the extent possible, within the province. Premium income for 1972 amounted to \$21.2 million and earned surplus amounted to \$44,294. The total amount made available to the Saskatchewan Government Finance Office from 1945 to December 31, 1972 was \$10 million.

Assets at the latter date were \$55.5 million of which \$28 million was invested in bonds and debentures issued by the province and by Saskatchewan municipalities, hospitals and schools. Independent insurance agents, numbering 554, sell insurance throughout the province on behalf of the Office.

The Automobile Accident Insurance Act, administered by the Saskatchewan Government Insurance Office on behalf of the provincial government, provides a comprehensive automobile accident insurance plan. Premiums paid by motorists create a fund from which benefits are paid in the event of death, injury or damages sustained in automobile accidents. Any surplus over payments is used to increase benefits, reduce premiums or absorb deficits in periods of high accident frequency. The surplus is not transferable to the general operation of the Saskatchewan Government Insurance Office, nor is any surplus credited to the provincial government. The plan provides protection against loss arising out of a motorist's liability to pay for bodily injury or death of others and damage to property of others, up to a limit of \$35,000, regardless of the number of claims arising from any one accident. Comprehensive coverage, including collision and upset, subject to \$200 deductible for private passenger cars and farm trucks is also provided. Rates vary from \$6 to \$104 for private passenger cars and \$5 to \$45 for farm trucks. There are various rates for other types of motor vehicles depending on size and usage. From the inception of the Act in 1946 to December 31, 1972, more than \$235 million was paid in claims.

The Saskatchewan Government Insurance Office, under contract with the Saskatchewan Department of Natural Resources, offers insurance to farmers covering damage to unharvested crops by certain wildlife such as ducks, geese, sandhill cranes, deer, elk, bear and antelope.

Alberta. Provincial government insurance in Alberta, coming within the purview of the Alberta Insurance Act, relates to the Alberta General Insurance Company, in which the entire business of the fire branch of the Alberta Government Insurance Office was vested by the Legislature on March 31, 1948, and to the Life Insurance Company of Alberta, which was constituted on the same date to take over the life branch of the Alberta Government Insurance Office. Each company is administered by a separate board of directors. The Lieutenant Governor in Council appoints the members to the respective boards but the charter of the Life Insurance Company of Alberta provides for the election of two policyholder directors. Although both companies are Crown corporations, they are not entitled to the usual immunities of the Crown, since they may sue and be sued in any court of competent jurisdiction.

A variety of agencies in Alberta offer forms of prepaid protection corresponding to insurance but the nature of the enabling legislation governing these plans emphasizes the fact that they do not constitute insurance. Because such exemptions are specifically provided by the insurance laws of the province, reference to these plans is necessary only to make it clear that they do not come within the scope of the Alberta Insurance Act. It should be noted that the Alberta Hail Insurance Act and the Alberta Crop Insurance Act are administered by the Alberta Hail and Crop Insurance Corporation and each contains a clause exempting its operations from the provisions of the Alberta Insurance Act.

Sources

- 19.1.1 - 19.1.2 Banking and Financial Analysis Department, Bank of Canada.
- 19.1.3 Royal Canadian Mint.
- 19.1.4 Banking and Financial Analysis Department, Bank of Canada; The Canadian Bankers' Association; Business Finance Division, Business Statistics Field, Statistics Canada.
- 19.1.5 The Province of Ontario Savings Office; Treasury Branches of Alberta; The Montreal City and District Savings Bank; Business Finance Division, Business Statistics Field, Statistics Canada.
- 19.2.1 Business Finance Division, Business Statistics Field, Statistics Canada.
- 19.2.2 Special Services Division, Department of Insurance.
- 19.2.3 Banking and Financial Analysis Department, Bank of Canada.
- 19.2.4 Financial Flows and Multinational Enterprise Division, Economic Accounts and Integration Branch, Statistics Canada.
- 19.3.1 - 19.3.2 Special Services Division, Department of Insurance.
- 19.3.3 Dominion Fire Commissioner, Department of Public Works.
- 19.3.4 Canada Deposit Insurance Corporation; The Manitoba Public Insurance Corporation; Saskatchewan Government Insurance Office; Department of Consumer Affairs, Government of Alberta.

Tables

..	not available	e	estimate
...	not appropriate or not applicable	p	preliminary
—	nil or zero	r	revised
--	too small to be expressed		certain tables may not add due to rounding

19.1 Bank rates from June 24, 1962 to Apr. 15, 1974

Date of change	% per annum	Date of change	% per annum	Date of change	% per annum
June 24, 1962	6.00	Nov. 20, 1967	6.00	Sept. 1, 1970	6.50
Sept. 7, 1962	5.50	Jan. 22, 1968	7.00	Nov. 12, 1970	6.00
Oct. 12, 1962	5.00	Mar. 15, 1968	7.50	Feb. 15, 1971	5.75
Nov. 13, 1962	4.00	July 2, 1968	7.00	Feb. 24, 1971	5.25
May 6, 1963	3.50	July 29, 1968	6.50	Oct. 25, 1971	4.75
Aug. 12, 1963	4.00	Sept. 3, 1968	6.00	Apr. 9, 1973	5.25
Nov. 24, 1964	4.25	Dec. 18, 1968	6.50	May 14, 1973	5.75
Dec. 6, 1965	4.75	Mar. 3, 1969	7.00	June 11, 1973	6.25
Nov. 14, 1966	5.25	June 11, 1969	7.50	Aug. 7, 1973	6.75
Jan. 30, 1967	5.00	July 16, 1969	8.00	Sept. 13, 1973	7.25
Apr. 7, 1967	4.50	May 12, 1969	7.50	Apr. 15, 1974	8.25
Sept. 27, 1967	5.00	June 1, 1970	7.00		

19.2 Assets and liabilities of the Bank of Canada, as at Dec. 31, 1971-73 (million dollars)

Item	1971	1972	1973
Assets			
Foreign exchange	43.1	54.0	32.5
Advances to chartered and savings banks	2.0	1.9	—
Bills bought in open market, excluding treasury bills	1.0	—	39.2
Investments			
Treasury bills of Canada	885.2	932.1	1,081.1
Other securities issued or guaranteed by Canada maturing within three years	1,769.8	2,053.3	2,282.3
Other securities issued or guaranteed by Canada not maturing within three years	2,160.5	2,421.5	2,612.5
Bonds and debentures issued by Industrial Development Bank	457.9	527.1	656.8
Other securities	217.2	416.6	778.6
Industrial Development Bank capital stock	56.0	59.0	64.0
Bank premises	22.2	23.1	29.5
All other assets	403.9	567.7	422.8
Total, assets	6,018.8	7,056.3	7,999.2
Liabilities			
Capital paid up	5.0	5.0	5.0
Reserve fund	25.0	25.0	25.0
Notes in circulation			
Held by chartered banks	597.5	750.5	931.0
All other	3,505.9	4,055.7	4,620.2
Deposits			
Government of Canada	68.4	26.6	6.4
Chartered banks	1,472.8	1,697.9	2,006.5
Other	44.0	52.3	54.2
Foreign currency liabilities	39.1	58.0	25.2
All other liabilities	261.1	385.3	325.9
Total, liabilities	6,018.8	7,056.3	7,999.2

19.3 Assets and liabilities of the Industrial Development Bank, as at Sept. 30, 1972 and 1973

Item		1972	1973
Assets			
Loans outstanding ^{1,2}	\$'000,000	594.5	713.1
Other assets	"	14.7	16.3
Total, assets	"	609.2	729.4
Liabilities			
Capital and reserves	"	84.8	92.6
Debentures outstanding	"	501.7	605.9
Other liabilities	"	22.7	30.9
Total, liabilities	"	609.2	729.4
Loan transactions			
Disbursements ¹	"	194.0	275.1
Repayments ¹	"	125.9	154.0
Loans outstanding plus undisbursed authorizations ¹	"	719.6	871.4
Customers on books	No.	16,075	19,142

¹Includes investments and agreements of sale.

²Net after allowance for doubtful accounts of \$17 million in 1972 and \$20.5 million in 1973.

19.4 Bank of Canada note liabilities, as at Dec. 31, 1971-73 (thousand dollars)

Denomination	1971	1972	1973
Bank of Canada notes			
\$1	152,542	164,282	178,378
\$2	106,421	118,107	129,432
\$5	252,204	283,856	311,355
\$10	791,521	879,661	968,676
\$20	1,676,013	2,003,766	2,361,845
\$25	46	46	46
\$50	286,538	336,195	379,375
\$100	768,859	928,878	1,104,052
\$500	30	30	25
\$1,000	56,352	78,528	105,145
Total	4,090,525	4,793,348	5,538,329
Note issues in process of retirement ¹	12,898	12,894	12,889
Total, Bank of Canada note liabilities	4,103,423	4,806,242	5,551,218
Held by:			
Chartered banks	597,542	750,498	931,014
Others	3,505,881	4,055,744	4,620,204

¹Includes, in 1973, chartered banks' notes \$8,137,580, Dominion of Canada notes \$4,635,569, provincial notes \$27,568 and defunct banks' notes \$88,156; these amounts have changed little in recent years.

19.5 Canadian dollar currency and chartered bank deposits, as at Dec. 31, 1966-73 (million dollars)

Year	Currency outside banks			Chartered bank deposits				Total currency and chartered bank deposits ¹		
	Notes	Coin	Total	Personal savings deposits	Government of Canada deposits	Other deposits ¹	Total ¹	Total including government deposits	Held by general public	Excluding personal savings deposits
1966	2,296	293	2,589	10,248	919	7,741	18,908	21,497	20,578	10,330
1967	2,494	335	2,829	11,760	618	9,096	21,473	24,302	23,685	11,925
1968	2,660	399	3,059	13,622	669	10,507	24,798	27,857	27,188	13,566
1969	2,903	434	3,337	15,030	1,308	9,540	25,878	29,214	27,906	12,876
1970	3,106	461	3,568	16,615	1,257	10,972	28,845	32,412	31,155	14,540
1971	3,506	488	3,993	17,783	2,239	14,572	34,594	38,587	36,348	18,565
1972	4,056	518	4,574	19,949	2,407	16,892	39,248	43,822	41,415	21,466
1973	4,620	589	5,209	24,604	2,361	19,220	46,186	51,395	49,034	24,430

¹Less total float, i.e., cheques and other items in transit.

19.6 Canadian coin¹ in circulation, as at Dec. 31, 1966-73

Year	Silver \$'000	Nickel \$'000	Tombac ² \$'000	Steel \$'000	Bronze \$'000	Total \$'000	Per capita \$
1966	263,557	27,052	549	3,447	33,107	327,712	16.37
1967	290,767	29,994	549	3,446	36,557	361,314	17.51
1968	316,837	75,464	549	3,445	39,705	436,000	20.82
1969	316,715	117,199	549	3,444	43,004	480,911	22.62
1970	316,610	137,890	549	3,444	46,092	504,583	23.60
1971	317,033	159,151	549	3,443	49,297	529,473	24.42
1972	317,269	185,141	549	3,442	53,494	559,896	25.65
1973	325,981	243,246	549	3,441	58,259	631,476	28.58

¹The figures shown are of net issues of coin.

²Tombac, a copper-zinc alloy, was used to conserve nickel for war purposes; no coins of this metal have been issued since 1944.

19.7 Receipts of gold bullion at the Royal Canadian Mint and bullion and coinage issued, 1966-73

Year	Gold received '000 oz t	Gold bullion issued '000 oz t	Silver coin issued \$'000	Nickel coin issued \$'000	Bronze coin issued \$'000
1966	2,676	2,631	23,722	656	2,141
1967	2,439	2,288	27,322	2,944	3,451
1968	2,237	2,222	26,167	45,472	3,150
1969	2,147	2,089	—	41,741	3,301
1970	2,114	2,150	—	20,702	3,089
1971	2,010	2,009	556	21,277	3,207
1972	1,931	1,895	350	26,006	4,199
1973	1,476	1,483	8,804	58,128	4,768

19.8 Statement of chartered bank assets and liabilities, as at Dec. 31, 1971-73 (thousand dollars)

Assets and liabilities	1971	1972	1973
Assets			
Gold coin and bullion	24,002	44,148	102,521
Other coin in Canada	41,943	41,533	34,193
Other coin outside Canada	1,319	1,242	1,213
Notes of and deposits with Bank of Canada	2,070,361	2,448,393	2,937,468
Government and bank notes other than Canadian	67,394	69,663	82,723
Deposits with banks in Canadian currency	298,260	269,666	379,834
Deposits with banks in currencies other than Canadian	7,668,562	9,524,095	14,758,530
Cheques and other items in transit (net)	1,040,562	1,191,326	2,421,955
Government of Canada treasury bills, at amortized value	2,700,482	2,964,432	3,433,442
Other Government of Canada issued or guaranteed securities maturing within three years, at amortized value	2,052,824	2,113,201	1,730,720
Government of Canada issued or guaranteed securities maturing after three years, at amortized value	2,581,957	2,050,781	2,081,334
Canadian provincial government issued or guaranteed securities, at amortized value	582,385	501,452	477,140
Canadian municipal and school corporation issued or guaranteed securities not exceeding market value	466,464	489,054	493,021
Other Canadian securities, not exceeding market value	1,296,563	1,614,074	1,487,645
Securities other than Canadian, not exceeding market value	452,934	548,065	496,181
Mortgages and hypothecs insured under the National Housing Act 1954	1,681,045	2,436,223	2,889,820
Day, call and short loans to investment dealers and brokers in Canadian currency, secured	918,445	1,082,111	1,046,542
Day, call and short loans to investment dealers and brokers in currencies other than Canadian, secured	715,430	972,527	536,842
Loans to Canadian provincial governments in Canadian currency	36,925	64,608	107,597
Loans to Canadian municipalities and school corporations in Canadian currency less provision for losses	737,350	829,602	1,133,189
Other loans in Canadian currency, less provision for losses	21,107,045	25,640,842	32,551,280
Other loans in currencies other than Canadian, less provision for losses	5,314,584	5,509,923	7,081,863
Bank premises at cost, less amounts written off	492,181	552,882	610,489
Securities of and loans to corporations controlled by the bank	247,636	241,360	260,121
Customers' liability under acceptances, guarantees and letters of credit, as per contra	1,763,445	1,944,765	2,526,756
Other assets	68,308	76,194	91,147
Total, assets	54,428,406	63,222,162	79,753,566
Liabilities			
Deposits by Government of Canada in Canadian currency	2,239,130	2,406,946	2,361,383
Deposits by Canadian provincial governments in Canadian currency	587,432	592,160	723,808
Deposits by banks in Canadian currency	350,749	414,329	492,637
Deposits by banks in currencies other than Canadian	6,419,118	8,410,824	13,322,655
Personal savings deposits payable after notice, in Canada, in Canadian currency	17,782,788	19,948,624	24,604,249
Other deposits payable after notice, in Canadian currency	6,214,608	7,643,511	9,282,512
Other deposits payable on demand, in Canadian currency	8,436,395	9,721,976	11,100,229
Other deposits in currencies other than Canadian	7,742,851	8,607,249	11,254,683
Advances from Bank of Canada, secured	2,000	1,900	—
Acceptances, guarantees and letters of credit	1,763,445	1,944,765	2,526,756
Other liabilities	269,182	300,907	403,970
Accumulated appropriations for losses	692,209	727,057	801,784
Debentures issued and outstanding	190,000	498,330	656,972
Capital paid up	307,800	321,354	343,197
Reserve account	1,415,169	1,663,492	1,862,156
Undivided profits at latest financial year-end	15,530	18,738	16,575
Total, liabilities	54,428,406	63,222,162	79,753,566

19.9 Canadian cash reserves, 1966-73 (million dollars)

Year	Cash reserves			Canadian dollar deposit liabilities	Average cash reserve ratio
	Bank of Canada deposits	Bank of Canada notes	Total		
1966	1,057	449	1,506	18,607	8.1
1967	1,110	487	1,597	20,668	7.7
1968	965	525	1,490	23,314	6.4
1969	1,090	560	1,650	25,916	6.4
1970	1,112	587	1,699	27,066	6.3
1971	1,356	610	1,966	31,329	6.3
1972	1,615	686	2,301	36,951	6.2
1973	1,902	768	2,670	42,246	6.3

Bank of Canada deposits are averages of the juridical days in the month shown; Bank of Canada notes and Canadian dollar deposits are averages of the four consecutive Wednesdays ending with the second last Wednesday in the previous month. Until June 1967 the required cash reserve ratio was 8% on both demand and notice deposits. For the next eight months the required minimum monthly average on demand deposits was increased by ½ of 1% per month and that on notice deposits was decreased by ½ of 1%. Since February 1968 the required ratios have been 12% for demand deposits and 4% for notice deposits as prescribed under the Bank Act.

19.10 Classification of chartered bank deposit liabilities payable to the public in Canada in Canadian currency, as at Apr. 30, 1972 and 1973 (number of accounts)

Deposit accounts of the public of:	1972			1973		
	Personal savings deposit accounts	Other deposit accounts of the public	Total deposit accounts of the public	Personal savings deposit accounts	Other deposit accounts of the public	Total deposit accounts of the public
Less than \$100	7,504,833	2,517,582	10,022,415	7,855,475	2,525,610	10,381,085
\$100 or over but less than \$1,000	5,266,146	2,358,266	7,624,412	5,550,660	2,563,122	8,113,782
\$1,000 or over but less than \$10,000	3,644,923	833,587	4,478,510	3,896,076	976,539	4,872,615
\$10,000 or over but less than \$100,000	327,248	159,858	487,106	384,688	194,988	579,676
\$100,000 or over	3,791	22,982	26,773	4,750	28,933	33,683
Total deposits	16,746,941	5,892,275	22,639,216	17,691,649	6,289,192	23,980,841

19.11 Classification of chartered bank loans in Canadian currency, as at Dec. 31, 1972 and 1973 (million dollars)

Class of loan	1972	1973
General loans		
Personal	8,062.6	9,841.0
To individuals, fully secured by marketable bonds and stocks	874.0	923.1
Home improvement loans	44.1	40.2
To individuals, not elsewhere classified	7,144.5	8,877.7
Farmers		
Farm Improvement Loans Act	373.3	452.3
Other farm loans	1,196.1	1,552.3
Industry	5,263.8	6,523.2
Chemical and rubber products	233.4	335.4
Electrical apparatus and supplies	277.6	375.8
Foods, beverages and tobacco	705.4	1,010.7
Forest products	600.0	720.9
Furniture	75.2	109.3
Iron and steel products	681.1	836.6
Mining and mine products	901.2	881.0
Petroleum and products	521.3	618.3
Textiles, leather and clothing	411.6	553.3
Transportation equipment	447.8	458.1
Other products	409.2	623.8
Merchandisers	2,041.3	2,729.9
Construction contractors	843.3	1,018.4
Public utilities, transportation and communications	894.0	1,240.4
Other business	4,418.4	5,623.3
Religious, educational, health and welfare institutions	342.3	415.3
Total, general loans	23,435.1	29,396.2
Other loans		
Provincial governments	64.6	107.6
Municipal governments and school districts	829.6	1,133.2
Stockbrokers	491.3	387.9
Investment dealers	271.8	392.9
Loans to finance the purchase of Canada Savings Bonds	314.2	322.2
Grain dealers and exporters	630.9	654.5
Instalment and other financial companies	303.1	424.0
Total, other loans	2,905.5	3,422.3
Total, loans in Canadian currency	26,340.6	32,818.5

19.12 Chartered bank revenues, expenses, shareholders' equity and accumulated appropriations for losses, as at Oct. 31, 1971-73 (million dollars)

Item	1971	1972	1973
For financial year ended Oct. 31			
Revenues			
Income from loans	2,652.8	2,923.5	4,161.4
Income from securities ¹	547.4	560.8	590.8
Other operating income	339.4	384.8	449.5
Total, revenues	3,539.6	3,869.1	5,201.7
Expenses			
Interest on deposits and bank debentures	1,859.2	1,928.5	2,861.1
Salaries, premiums, contributions and other staff benefits	670.9	740.1	918.2
Property expenses, including depreciation	196.5	217.9	258.5
Other operating expenses ²	256.0	313.0	385.0
Total, expenses ³	2,982.6	3,199.5	4,422.8
Balance of revenue ⁴	557.0	669.6	778.9

19.12 Chartered bank revenues, expenses, shareholders' equity and accumulated appropriations for losses, as at Oct. 31, 1971-73 (million dollars) (concluded)

Item	1971	1972	1973
Less:			
Loss experience not included in other operating expenses	-52.2	-8.3	27.5
Appropriations for losses, net ^a	88.2	34.8 ^r	74.7
Income taxes	275.5	311.2 ^r	355.0
Leaving for dividends and shareholders' equity	245.5	331.9	321.7
Dividends	115.5	130.0	147.2
Total additions to shareholders' equity	137.4	208.7	274.8
From above operations	130.0	201.9	174.5
From issue of new shares including premiums	7.4	6.8	100.3
As at end of financial year			
Shareholders' equity			
Undivided profits	15.5 ^r	18.7 ^r	16.6
Rest account	1,415.1	1,615.6	1,862.1
Capital paid up	307.8	312.8	343.2
Total, shareholders' equity	1,738.4 ^r	1,947.1 ^r	2,221.9
Accumulated appropriations for losses	692.2	727.1 ^r	801.8

^aExcludes realized profits and losses on securities held in investment account which are included in the item "Loss experience not included in other operating expenses".

^rIncludes provision for losses based on five-year average loss experience and taxes other than income taxes.

^bBefore provision for income taxes and appropriations for losses other than those included in "Other operating expenses".

^cGeneral and tax-paid appropriations for losses: net after any transfers out of accumulated appropriations for losses to undivided profits or rest account.

19.13 Branches¹ of chartered banks, by province, as at Dec. 31, 1920-73

Province or territory	1920	1930	1940	1950	1960	1970	1971	1972	1973
Newfoundland	—	—	—	39	71	114	120	124	127
Prince Edward Island	41	28	25	23	27	30	30	30	31
Nova Scotia	169	138	134	144	173	202	205	209	217
New Brunswick	121	102	97	100	113	136	140	147	154
Quebec	1,150	1,183	1,083	1,164	1,427	1,524	1,508	1,506	1,513
Ontario	1,586	1,409	1,208	1,257	1,785	2,307	2,398	2,487	2,580
Manitoba	349	239	162	165	234	310	315	323	327
Saskatchewan	591	447	233	238	296	350	354	353	356
Alberta	424	304	172	246	394	521	539	563	588
British Columbia	242	229	192	294	514	684	716	736	776
Yukon Territory and Northwest Territories	3	4	5	9	17	21	27	30	32
Canada	4,676	4,083	3,311	3,679	5,051	6,199	6,352	6,508	6,701

¹Figures include sub-agencies and sub-branches in Canada receiving deposits for the banks employing them.

19.14 Branches¹ of individual Canadian chartered banks, by province, as at Dec. 31, 1972 and 1973

Bank	Province or territory											
	Nfld.		PEI		NS		NB		Que.		Ont.	
	1972	1973	1972	1973	1972	1973	1972	1973	1972	1973	1972	1973
Bank of Montreal	35	36	3	3	31	32	26	26	212	216	439	457
The Bank of Nova Scotia	51	52	9	10	60	64	46	48	76	80	365	378
The Toronto-Dominion Bank	2	2	1	1	4	4	6	6	88	91	462	471
La Banque Provinciale du Canada	—	—	2	2	—	—	20	20	259	265	28	30
Canadian Imperial Bank of Commerce	16	17	9	9	31	34	21	26	187	191	691	708
The Royal Bank of Canada	20	20	6	6	82	82	28	28	196	202	484	502
Banque Canadienne Nationale	—	—	—	—	—	—	—	—	486	466	17	18
The Mercantile Bank of Canada	—	—	—	—	1	1	—	—	2	2	1	2
Bank of British Columbia	—	—	—	—	—	—	—	—	—	—	—	—
Unity Bank of Canada	—	—	—	—	—	—	—	—	—	—	—	14
Total	124	127	30	31	209	217	147	154	1,506	1,513	2,487	2,580
	Man.		Sask.		Alta.		BC		YT and NWT		Total	
	1972	1973	1972	1973	1972	1973	1972	1973	1972	1973	1972	1973
Bank of Montreal	73	72	63	63	119	123	147	157	6	6	1,154	1,191
The Bank of Nova Scotia	29	29	40	40	81	86	95	99	2	2	854	888
The Toronto-Dominion Bank	47	47	43	45	81	86	92	98	2	3	828	854
La Banque Provinciale du Canada	—	—	—	—	—	—	—	—	—	—	309	317
Canadian Imperial Bank of Commerce	80	84	105	106	163	169	216	220	17	18	1,536	1,582
The Royal Bank of Canada	88	88	102	102	117	122	164	176	3	3	1,290	1,331
Banque Canadienne Nationale	5	5	—	—	—	—	—	—	—	—	508	489
The Mercantile Bank of Canada	1	1	—	—	2	2	1	1	—	—	8	9
Bank of British Columbia	—	—	—	—	—	—	21	24	—	—	21	24
Unity Bank of Canada	—	1	—	—	—	—	—	1	—	—	—	16
Total	323	327	353	356	563	588	736	776	30	32	6,508	6,701

¹Figures include sub-agencies and sub-branches in Canada for receiving deposits.

19.15 Canadian chartered banks¹ outside Canada, as at Dec. 31, 1973

Region and country	Representation	Region and country	Representation
Asia		St. Vincent	2
Hong Kong	7	Tobago	3
India	1	Trinidad	46
Indonesia	3	Virgin Islands	8
Japan	5	Europe	
Lebanon	3	Belgium	2
Malaysia	1	France	6
Singapore	4	Germany, Federal Republic of	9
Australia		Great Britain	30
Australia	2	Greece	2
Caribbean		Ireland	2
Antigua	3	Italy	2
Bahamas	48	The Netherlands	4
Barbados	23	Switzerland	1
Dominica	1	North America	
Grand Cayman	9	Belize	9
Grenada	7	Dominican Republic	19
Guadeloupe	1	Mexico	3
Haiti	2	United States	63
Jamaica	92	South America	
Martinique	1	Argentina	5
Montserrat	1	Brazil	3
Netherlands Antilles	1	Colombia	9
Puerto Rico	10	Guyana	12
St. Kitts	1	Venezuela	13
St. Lucia	5		

¹Chartered banks are represented by branches, agencies, representative offices, and/or branches of subsidiary companies.

19.16 Cheques cashed at 50 clearing centres, 1971 and 1972 (thousand dollars)

Clearing centre	1971	1972	Clearing centre	1971	1972
ATLANTIC PROVINCES	24,552,674	26,859,804	London	11,671,346	13,765,435
Charlottetown	871,711	969,533	Niagara Falls	1,111,849	1,221,412
Fredericton	2,133,065	2,279,895	Oshawa	8,651,600	8,694,246
Glace Bay	143,868	125,258	Ottawa	18,309,177	20,365,185
Halifax	9,472,273	10,369,454	Peterborough	1,339,532	1,447,390
Moncton	1,851,592	2,219,530	St. Catharines	2,524,045	2,719,899
Saint John	2,903,291	3,190,423	Sarnia	1,651,158	1,723,631
St. John's	6,150,676	6,701,299	Sault Ste Marie	3,139,508	1,925,422
Sydney	1,026,198	1,004,412	Sudbury	2,239,210	2,337,870
QUEBEC	238,416,802^r	276,603,783	Thunder Bay	2,359,606	2,442,856
Chicoutimi	992,558	1,090,461	Timmins	499,787	547,931
Drummondville	917,173 ^r	768,785	Toronto	387,036,643	460,485,009
Granby	1,003,583 ^r	907,097	Windsor	7,809,971	8,743,592
Montreal	205,857,334 ^r	238,054,245	PRAIRIE PROVINCES	113,313,909	124,969,889
Quebec	24,396,066 ^r	30,724,156	Brandon	610,258	729,440
St. Hyacinthe	1,184,023 ^r	1,091,106	Calgary	29,754,338	33,402,603
Shawinigan Falls	344,938	368,582	Edmonton	21,845,007	24,487,009
Sherbrooke	2,028,565 ^r	2,007,396	Lethbridge	1,353,101	1,532,404
Trois-Rivières	1,313,820 ^r	1,171,183	Medicine Hat	537,756	585,385
Valleyfield	378,742 ^r	420,772	Moose Jaw	455,166	506,195
ONTARIO	478,184,724	558,772,881	Prince Albert	541,733	648,165
Brantford	1,734,427	1,966,049	Regina	12,463,808	12,647,496
Chatham	2,429,682	3,235,953	Saskatoon	3,196,743	3,360,521
Cornwall	1,093,852	1,177,124	Winnipeg	42,555,999	47,070,671
Guelph	1,344,384	1,627,043	BRITISH COLUMBIA	64,994,234	78,726,888
Hamilton	16,928,597	17,335,918	Vancouver ¹	56,335,442	68,766,823
Kingston	1,683,604	1,818,886	Victoria	8,638,792	9,960,065
Kitchener	4,626,746	5,192,030	Total	919,462,343^r	1,065,933,245

¹Includes New Westminster.

19.17 Credit unions in Canada, 1966-72

Year	Credit unions chartered	Credit unions reporting	Members	Assets \$'000	Loans granted to members \$'000
1966	4,934	4,415	3,859,677	2,926,134	1,226,541
1967	4,911	4,404	4,280,908	3,367,732	1,323,076
1968	4,861	4,373	4,632,382	3,699,840	1,482,003
1969	4,769	4,485	5,002,722	4,064,065	1,525,655
1970	4,593	4,411	5,203,402	4,591,953	1,781,331
1971	4,441	3,972	5,623,994	5,587,728	1,828,888
1972	4,351	3,944	5,843,820	6,761,224	2,970,397

19.18 Summary statistics of credit unions, by province, 1972

Province or territory	Credit unions chartered	Credit unions reporting	Members	Assets \$'000	Shares \$'000	Deposits \$'000	Loans granted to members \$'000
Newfoundland	58	18	5,711	3,289	2,532	416	2,414
Prince Edward Island	14	14	15,458	9,708	3,776	2,386	5,524
Nova Scotia	139	137	111,896	70,799	42,093	20,000	52,498
New Brunswick	151	151	120,117	65,054	46,440	10,207	33,616
Quebec	1,662	1,638	3,246,386	3,437,848	311,695	2,904,045	992,556
Ontario	1,425	1,094	1,154,298	1,334,910	665,744	545,934	907,245
Manitoba	202	202	225,950	301,995	1,045	277,304	156,280
Saskatchewan	257	256	355,276	608,574	248,222	316,459	245,093
Alberta	235	228	204,068	246,279	92,817	126,732	151,617
British Columbia	205	204	404,660	682,651	180,785	423,901	423,554
Northwest Territories	3	2	..	117	43	55	..
Total	4,351	3,944	5,843,820	6,761,224	1,595,192	4,627,439	2,970,397

19.19 Assets, liabilities and members' equity of local credit unions in Canada, 1971 and 1972 (million dollars)

Item	1971	1972	Item	1971	1972
Assets			Fixed assets		
Cash and demand deposits			Land and buildings	118	127
On hand	71	212	Equipment and furniture	37	33
In banks	47	52	Other assets	49	107
In centrals	516	481	Total, assets	5,587	6,761
Other	36	87			
Investments			Liabilities		
Term deposits	232	320	Accounts payable		
Government of Canada	60	38	Interest	9	39
Provincial governments	158	220	Dividends	3	2
Municipal governments	503	512	Other	22	20
Shares in centrals	54	64	Loans payable		
Religious institutions	33	52	Centrals	71	123
Hospitals	21	8	Banks	7	10
Other	99	109	Other	5	5
Loans			Deposits		
Cash loans			Ordinary	2,530	3,051
Personal	1,684	1,964	Term	1,214	1,577
Farm	96	80	Other liabilities	4	35
Co-operatives and other enterprises	29	33	Members' equity		
Other	55	36	Share capital	1,415	1,595
Mortgage loans			Reserves	228	256
Dwellings	1,495	1,999	Undivided earnings	79	48
Farm	110	115	Total, liabilities and members' equity	5,587	6,761
Co-operatives and other enterprises	48	67			
Other	36	44			

19.20 Assets, liabilities and shareholders' equity of trust companies (company and guaranteed funds), 1971 and 1972 (million dollars)

Item	1971	1972	Item	1971	1972
Assets			Liabilities		
Demand deposits, incl. cash and foreign currency	257	134	Demand and savings deposits		
Investments			Chequing	455	530
Investments in Canadian securities			Non-chequing	1,229	1,450
Federal	526	519	Term deposits		
Provincial	380	359	Under 1 year	1,000	1,072
Municipal	104	100	1 to 5 years	4,104	4,751
Sales finance and commercial paper	440	343	Over 5 years	23	26
Term deposits with chartered banks	263	500	Bank loans	12	8
Term deposits with trust and mortgage companies	36	48	Short-term loans and notes payable	5	..
Corporation bonds and debentures	398	423	Debts owing parent and affiliated companies	10	16
Collateral loans	187	246	Interest, dividends, taxes and other payables	157	210
Mortgages			Shareholders' equity		
Loans under NHA	924	1,216	Capital paid up	134	212
Conventional mortgage loans	3,556	4,276	Investment reserves	68	40
Investments in Canadian preferred and common shares	120	143	Reserve fund	249	216
Investments in foreign securities	26	27	Retained earnings	24	70
Investments in subsidiary and affiliated companies	67	51	Total, liabilities and shareholders' equity	7,470	8,601
Interest, rents and other receivables	73	99			
Real estate and equipment	60	67			
Other assets	53	50			
Total, assets	7,470	8,601			

19.21 Assets, liabilities and shareholders' equity of mortgage companies, 1971 and 1972 (million dollars)

Item	1971	1972	Item	1971	1972
Assets			Liabilities		
Demand deposits, incl. cash and foreign currency	43	31	Demand and savings deposits		
Investments			Chequing	159	177
Investments in Canadian securities			Non-chequing	387	429
Federal	164	161	Term deposits		
Provincial	70	53	Under 1 year	63	78
Municipal	8	6	1 to 5 years	1,860	2,109
Sales finance and commercial paper	61	25	Over 5 years	681	526
Term deposits with chartered banks	51	51	Bank loans	83	62
Term deposits with trust and mortgage companies	4	3	Short-term loans and notes payable	96	190
Corporation bonds and debentures	51	80	Debts owing parent and affiliated companies	166	169
Collateral loans	34	96	Interest, dividends, taxes, and other payables	162	521
Mortgages			Shareholders' equity		
Loans under NHA	405	530	Capital paid up	253	247
Conventional mortgage loans	2,747	3,236	Investment reserves	34	31
Investments in Canadian preferred and common shares	79	80	Reserve fund	151	163
Investments in foreign securities	9	8	Retained earnings	64	76
Investments in subsidiary and affiliated companies	295	287	Total liabilities and shareholders' equity	4,159	4,778
Interest, rents and other receivables	40	48			
Real estate and equipment	56	57			
Other assets	42	26			
Total, assets	4,159	4,778			

19.22 Revenues and expenses of trust and mortgage companies, 1971 and 1972 (million dollars)

Item	Trust companies		Mortgage companies	
	1971	1972	1971	1972
Revenues				
Interest earned	539	620	297	347
Dividends	6	8	15	14
Fees and commissions	144	175	2	3
Other revenues	11	14	27	31
Total, revenues	700	817	341	395
Expenses				
Interest	416	468	216	247
Depreciation	4	5	2	2
Amortization	—	—	1	—
Income taxes	41	46	24	28
Other expenses	192	239	59	72
Total, expenses	653	758	302	349
Net profit	47	59	39	46

19.23 Assets and liabilities of small loans companies and money-lenders, 1971 and 1972 (thousand dollars)

Assets and liabilities	1971	1972
Assets		
Small loans balances	439,644	383,109
Balances, large loans and other contracts	881,714	1,116,304
Cash	17,741	14,617
Other	28,457	32,037
Total, assets	1,367,556	1,546,067
Liabilities		
Borrowed money	912,238	997,220
Unearned charges on large loans and other contracts	179,732	248,947
Reserves for losses	39,553	46,362
Paid-up capital	66,412	66,516
Surplus paid in by shareholders	21,312	21,307
Earned surplus	113,533	127,411
Other	34,776	38,304
Total, liabilities	1,367,556	1,546,067

19.24 Price of the United States dollar in Canada, by month, 1966-73 (Canadian cents per US dollar)

Month	1966	1967	1968	1969	1970	1971	1972	1973
January	107.46	107.95	108.47	107.27	107.28	101.16	100.59	99.91
February	107.63	108.06	108.73	107.44	107.31	100.75	100.46	99.55
March	107.62	108.20	108.49	107.67	107.27	100.63	99.84	99.66
April	107.70	108.24	108.01	107.62	107.28	100.76	99.56	100.06
May	106.67	108.21	107.79	107.70	107.28	100.87	98.87	100.05
June	107.65	108.04	107.68	107.95	103.84	102.12	97.94	99.83
July	107.48	107.78	107.36	108.06	103.20	102.11	98.39	99.94
August	107.51	107.58	107.26	107.81	102.14	101.33	98.22	100.38
September	107.62	107.53	107.30	107.82	101.59	101.29	98.29	100.81
October	107.93	107.33	107.27	107.79	102.14	100.44	98.26	100.09
November	108.20	107.51	107.30	107.58	102.00	100.37	98.72	99.88
December	108.31	108.02	107.31	107.42	101.74	99.92	99.67	99.94
Annual average	107.73	107.87	107.75	107.68	104.40	100.98	99.05	100.01

Rates published by Bank of Canada. Noon average market rate for business days in period.

19.25 Canada's official international reserves and undelivered contracts, 1966-73 (million US dollars)

End of:	Convertible foreign currencies ¹		Special Drawing Rights ^{2, 4}	Gold ⁴	Reserve position in the IMF ⁴	Total ⁴	Undelivered contracts in US dollars ⁵
	US dollars	Other ³					
1966	1,195.4	12.4	—	1,045.6	448.5	2,701.9	-5.5
1967	1,255.2	13.4	—	1,014.9	433.4	2,716.9	16.7
1968	1,964.9	11.6	—	863.1	206.2	3,045.8	25.2
1969	1,743.6	12.3	—	872.3	478.1	3,106.3	7.5
1970	3,022.1	14.5	182.1	790.7	669.6	4,679.0	..
1971	4,060.6	13.6	371.9	791.8	332.6	5,570.4	..
1972	4,355.0	12.6	505.2	834.1	342.9	6,049.9	..
1973	3,927.2	12.2	563.7	926.9	338.2	5,768.2	..

¹Convertible foreign currency holdings of the Exchange Fund Account, the Receiver General for Canada and the Bank of Canada.

²Valued at official rates in terms of US dollars to 1972 and at market rates in 1973.

³Holdings of Special Drawing Rights (SDRs) reflect allocations to Canada of SDRs and transactions involving Canada under the arrangements by the International Monetary Fund providing for the use of SDRs by member countries and by the IMF.

⁴Canada's gold and gold-based assets were revalued from US\$35 to US\$38 per oz 1 of fine gold in May 1972, and to US\$42.22 in October 1973.

⁵Includes all overnight and forward transactions of the Exchange Fund Account and the Bank of Canada that affect the total of official reserves. A positive figure indicates a net commitment to take delivery of foreign exchange in the future and a negative figure indicates a commitment to deliver foreign exchange in the future.

19.26 Canadian bonds outstanding as at Dec. 31, 1967-72, and annual changes in bonds and in short-term paper outstanding (million dollars)

Item	1967	1968	1969	1970	1971	1972
Bonds outstanding Dec. 31						
Government of Canada	22,011	23,556	23,902	25,746	28,277	29,873
Provincial government	15,633	17,614	19,676	21,761	24,056	27,090
Municipal government	6,128	6,416	6,659	6,832	7,047	7,453
Corporate	12,284	13,054	13,927	15,494	17,025	18,527
Institutional	338	398	479	602	657	712
Total	56,394	61,038	64,643	70,435	77,062	83,655
Changes in bonds outstanding and in short-term paper¹						
Bonds						
Government of Canada	900	1,545	346	1,844	2,531	1,596
Treasury bills	285	370	70	730	205	330
Marketable bonds	310	1,073	-165	461	272	64
Non-marketable bonds	305	102	441	653	2,054	1,202
Provincial government	2,099	1,981	2,062	2,085	2,295	3,034
Municipal government	410	288	243	173	215	406
Corporate	869	770	873	1,567	1,531	1,502
Institutional	29	60	81	123	55	55
Total, bonds	4,307	4,644	3,605	5,792	6,627	6,593
Short-term paper						
Corporate						
Finance and other commercial paper	100	471	541	85	209	207
Canadian dollar bankers' acceptances	-24	-30	58	221	8	-13
Total, short-term paper	76	441	599	306	217	194
Total bonds and short-term paper	4,383	5,085	4,204	6,098	6,844	6,787

Federal, provincial and municipal bonds include direct and guaranteed issues; institutional bonds exclude bonds payable in Canadian dollars of the International Bank for Reconstruction and Development and certain foreign governments, amounting to \$119 million, \$133 million, \$115 million, \$105 million, \$128 million and \$145 million in the years 1967-72, respectively.

¹Changes in bonds outstanding do not agree with Bank of Canada figures on net new issues due to takeovers, bankruptcies, etc.

19.27 Estimated distribution of bond holdings, as at Dec. 31, 1972

Holder	Government of Canada bonds \$'000,000	Provincial government bonds \$'000,000	Municipal government bonds \$'000,000	Corporate and other bonds \$'000,000	Total \$'000,000	% of total
Bank of Canada	5,453	—	—	527	5,980	7.1
Chartered banks	7,132	492	474	1,577	9,675	11.6
Government of Canada	611	5,371 ¹	—	—	5,982	7.2
Provincial governments	425	2,578	269	806	4,078	4.9
Municipal governments	79	158	881	29	1,147	1.4
Life insurance companies	528	1,256	609	3,668	6,061	7.2
Other insurance companies	544	816	257	915	2,532	3.0
Quebec savings banks	32	68	67	69	236	0.3
Trust and mortgage loan companies	680	413	106	502	1,701	2.0
Trusted pension plans	268	3,707	736	2,132	6,843	8.2
All other resident	13,245 ²	4,532	2,426	2,802	23,005	27.5
Non-resident	876	7,699	1,628	6,212	16,415	19.6
All holders	29,873	27,090	7,453	19,239	83,655	100.0

Federal, provincial and municipal bonds include direct and guaranteed issues; "other" bonds include bonds of religious and other institutions, and a small amount of foreign bonds payable in Canadian dollars; short-term commercial borrowing is excluded.

¹Held by the Canada Pension Plan Investment Fund.

²Includes Canada Savings Bonds of \$11,111 million.

19.28 Life insurance effected and in force in Canada by insurance companies under federal registration, 1880-1972 (million dollars)

Year	New insurance effected during year	Amounts in force Dec. 31			
		Canadian	British	Foreign	Total
1880	14	38	20	34	91
1900	68	267	39	124	431
1920	630	1,664	77	916	2,657
1940	590	4,609	146	2,221	6,975
1960	5,693	30,418	1,555	12,676	44,649
1965	8,967	47,900	3,071	18,685	69,656
1970	12,915	76,775	5,727	28,615	111,116
1971	15,940	84,946	6,319	30,626	121,891
1972	17,566	96,293	6,944	33,168	136,405

19.29 Summary of the number of life insurance policies and related amounts in force in Canada reported by federally registered companies, 1971 and 1972

Policies	Number of policies '000		Amounts in force \$'000,000	
	1971	1972	1971	1972
New policies effected during year	678	701	15,940	17,566
Total policies in force Dec. 31	10,291	10,383	121,891	136,405
Policies ceased by death or maturity	131	134	528	557

19.30 Amounts of ordinary¹ and group life insurance policies effected and in force in Canada by federally registered companies, 1971 and 1972 (million dollars)

Policies	Canadian		British		Foreign	
	1971	1972	1971	1972	1971	1972
Effected during year						
Ordinary ¹	5,464	6,356	851	858	2,383	2,523
Group	5,337	5,713	342	226	1,562	1,890
In force Dec. 31						
Ordinary ¹	40,871	44,853	4,931	5,346	15,643	16,520
Group	44,075	51,439	1,388	1,598	14,983	16,649

¹Includes industrial policies.

19.31 Life insurance premiums (direct written), by province, 1972 (million dollars)

Province or territory	Ordinary ¹	Group	Total
Newfoundland	11	4	15
Prince Edward Island	3	1	4
Nova Scotia	35	11	46
New Brunswick	24	8	32
Quebec	315	106	421
Ontario	466	171	637

19.31 Life insurance premiums (direct written), by province, 1972 (million dollars) (concluded)

Province or territory	Ordinary ¹	Group	Total
Manitoba	42	15	57
Saskatchewan	29	11	40
Alberta	74	23	97
British Columbia	101	35	136
Yukon Territory and Northwest Territories	1	1	2
Miscellaneous	21	2	23
Total	1,122	388	1,510

¹Includes industrial policies.**19.32 Major assets and liabilities of federally registered life insurance companies as at Dec. 31, 1971 and 1972 (million dollars)**

Assets and liabilities	Canadian ¹		British ²		Foreign ³	
	1971	1972	1971	1972	1971	1972
Assets						
Bonds	5,804	6,169	456	481	1,199	1,303
Stocks	1,364	1,521	233	314	3	7
Mortgages	6,416	6,634	413	410	1,153	1,222
Real estate	775	885	33	64	57	57
Policy loans	1,149	1,167	45	48	148	152
Other assets	680	767	94 ³	102	100 ³	119
Segregated	891	1,323	63	132	11	70
Total	17,079	18,466	1,337	1,551	2,671	2,930
Liabilities						
Actuarial reserves	12,543	13,308	1,086	1,178	2,124	2,271
Outstanding claims	182	195	8	9	41	43
Amounts on deposit	1,100	1,155	4	4	105	113
Other liabilities	1,193	1,226	37	38	138	151
Segregated	883	1,313	63	136	11	44
Total	15,901	17,197	1,198	1,365	2,419	2,622
Surplus or excess ⁴	1,144	1,234	139	186	252	308
Capital stock	34	35	...	...	...	...

¹Assets at book values, in and out of Canada (segregated funds at market values).²Assets at market values, in Canada only.³Includes assets under control of Chief Agent in Canada.⁴Excess of assets over liabilities in Canada for British and foreign companies; for such companies, "capital stock" is not applicable in Canada.**19.33 Major items of income and expenditure of federally registered life insurance companies, 1972 (million dollars)**

Income and expenditure	Canadian ¹	British ²	Foreign ³
Income			
Insurance premiums and annuity considerations	2,378	205	431
Investment income — regular funds	1,049	91	186
Net investment gain — segregated funds	178	27	4
Other items	65	6	27
Total income	3,670	329	648
Selected expenditure			
Claims incurred	1,195	83	230
Dividends to policyholders	281	26	75
Commissions and general expenses	566	43	105
Taxes, licences and fees	97	15	51

¹World-wide business.²Business in Canada only.**19.34 Fire and casualty net premiums written and net claims incurred, by class of insurance and by incorporation of company, 1972 (million dollars)**

Insurance class	Net premiums written				Net claims incurred
	Canadian	British	Foreign	Total	
Property ¹	240	102	244	586	343
Automobile	505	167	309	981	711
Liability	53	21	37	111	60
Accident and sickness	263	7	208	478	364
Other casualty ²	36	16	42	94	29
Marine	5	8	15	28	15
Total	1,102	321	855	2,278	1,522

¹Includes fire, personal property, real property, windstorm, earthquake, inland transportation, livestock, theft, forgery, plate glass.²Includes hail, fidelity, surety, boiler and machinery, aircraft, credit, title, mortgage.

19.35 Fire and casualty direct premiums written and claims incurred, by province and by category of company, 1972 (million dollars)

Province or territory	Premiums written		Lloyd's	Total	Claims incurred
	Companies federally registered	Companies provincially licensed			
Newfoundland	32	3	3	38	24
Prince Edward Island	8	1	1	9	6
Nova Scotia	68	1	1	69	46
New Brunswick	61	1	1	63	42
Quebec	639	166	36	841	574
Ontario	936	143	16	1,095	701
Manitoba	49	43	1	93	71
Saskatchewan	30	22	1	53	31
Alberta	174	18	8	200	116
British Columbia	280	24	14	318	219
Yukon Territory and Northwest Territories	11	1	1	12	5
Total	2,288	421	82	2,791	1,835

¹Less than \$500,000.**19.36 Major assets and liabilities of federally registered fire and casualty insurance companies, 1971 and 1972 (million dollars)**

Assets and liabilities	Canadian ¹		British ²		Foreign ²	
	1971	1972	1971	1972	1971	1972
Assets						
Bonds	836	1,015	347	357	988	1,032
Stocks	351	360	85	131	54	72
Amounts due from agents and premiums receivable	143	165	47	50	89	92
Other	302	380	55	56	139	176
Total	1,632	1,920	534	594	1,270	1,372
Liabilities						
Unearned premiums	391	441	130	139	330	361
Unpaid claims	565	704	165	182	432	474
Other	236	286	19	18	107	113
Total	1,192	1,431	314	339	869	948
Surplus or excess ³	342	369	220	254	401	424
Capital stock and amounts transferred	98	120	...	...	...	...

¹Business in and out of Canada, investments on book value basis. Deduction, if any, for excess of market over book value in "Other" assets.²Business in Canada only, investments on market value basis.³Excess of assets over liabilities in Canada for British and foreign companies; for such companies, "capital stock" is not applicable in Canada.**19.37 Fire and casualty insurance, underwriting results in Canada, 1973 (million dollars)**

Registered companies	Underwriting income earned	Claims ¹ incurred	Expenses incurred	Dividends to policyholders	Underwriting gain
Canadian²					
Fire and casualty	956.2	678.4	333.2	1.4	-56.8
A and S branches ³	288.2	236.1	48.5	16.0	-12.4
British	304.4	216.3	106.1	4	-18.0
Foreign					
Fire and casualty	729.5	544.6	244.8	4.1	-64.0
A and S branches ³	181.8	128.8	40.2	10.3	2.5
Total, 1973	2,460.1	1,804.2	772.8	31.8	-148.7
1972	2,166.1	1,509.5	695.0	23.4	-61.8
1971	1,953.6	1,326.7	645.6	15.2	-33.9
1970	1,777.4	1,151.0	625.6	16.8	-16.0
1969	1,673.7	1,139.3	582.5	12.9	-61.0

¹Includes adjustment expenses.²Excludes transactions out of Canada.³Accident and sickness branches of life insurance companies.⁴Less than \$500,000.

19.38 Fire losses¹, by province, 1970-72

Province or territory	Property loss		1972 Fires reported	Property loss \$'000	Loss per capita \$
	1970 \$'000	1971 \$'000			
Newfoundland	1,731	3,613	847	4,507	8.47
Prince Edward Island	909	1,249	521	1,273	11.26
Nova Scotia	5,103	6,291	1,763	7,118	8.96
New Brunswick	4,434	6,263	1,084	4,875	7.59
Quebec	59,561	68,833	26,367	78,859	13.03
Ontario	67,912	82,037	26,102	79,237	10.12
Manitoba	7,990	9,928	3,974	14,649	14.76
Saskatchewan	4,679	5,852	2,112	6,569	7.17
Alberta	15,648	15,699	7,570	18,087	10.92
British Columbia	34,561	34,717	8,120	37,389	16.63
Yukon Territory and Northwest Territories	1,668	1,596	435	1,703	30.96
Canada	204,194	236,077	78,895	254,267	11.65

¹Excludes forest fires.**19.39 Fire losses¹, by type of property and cause of fire, 1971 and 1972**

Type of property and reported cause of fire	1971		1972	
	Fires reported	Property loss \$'000	Fires reported	Property loss \$'000
Type of property				
Residential	51,133	76,358	50,552	82,187
Mercantile	3,614	41,377	4,614	52,656
Farm	4,970	21,277	7,937	23,407
Manufacturing	1,710	31,101	1,635	40,515
Institutional and assembly	2,128	23,987	2,420	21,490
Miscellaneous	9,174	41,977	11,737	34,010
Total	72,729	236,077	78,895	254,267
Reported cause				
Smokers' carelessness	21,592	13,458	22,036	18,095
Stoves, furnaces, boilers and smoke pipes	8,304	20,881	5,807	19,948
Electrical wiring and appliances	10,955	41,697	14,782	44,141
Matches	1,298	2,369	2,269	3,514
Defective and overheated chimneys and flues	788	1,972	762	2,546
Hot ashes, coals and open fires	3,620	15,355	3,427	19,120
Petroleum and its products	2,699	6,924	2,404	8,941
Lights, other than electric	548	1,319	451	358
Lightning	2,472	2,866	2,975	2,604
Sparks on roofs	134	256	108	324
Exposure fires	1,658	7,154	1,518	8,620
Spontaneous ignition	676	3,209	487	3,460
Incendiarism	2,915	19,408	3,369	23,763
Miscellaneous known causes (explosions, fireworks, friction, hot grease or metal, steam or hot water pipes, etc.)	8,450	34,644	11,725	45,918
Unknown	6,620	64,564	6,775	52,915

¹Excludes forest fires.**Sources**

19.1 - 19.5 Banking and Financial Analysis Department, Bank of Canada.

19.6 - 19.7 Royal Canadian Mint.

19.8 - 19.12 Banking and Financial Analysis Department, Bank of Canada.

19.13 - 19.15 The Canadian Bankers' Association.

19.16 - 19.22 Business Finance Division, Business Statistics Field, Statistics Canada.

19.23 Special Services Division, Department of Insurance.

19.24 - 19.25 Banking and Financial Analysis Department, Bank of Canada.

19.26 - 19.27 Financial Flows and Multinational Enterprise Division, Economic Accounts and Integration Branch, Statistics Canada.

19.28 - 19.37 Special Services Division, Department of Insurance.

19.38 - 19.39 Dominion Fire Commissioner, Department of Public Works.

Chapter 20

Government finance

20.1 Consolidated finance statistics

Details of consolidated government revenue by source and consolidated government expenditure by function for the years 1966-70 are presented in Table 20.1. The consolidation reflects the relationship between government at all levels, considered as a single entity, and the public in respect of revenue raised and services provided. The consolidated gross general figures were arrived at by eliminating from the gross general revenue sources and the gross general expenditure functions of each level of government all general purpose transfers such as the federal statutory subsidies and equalization payments to the provinces, all specific-purpose transfers such as federal contributions to provincial hospitalization and medical care programs, and all other transactions among levels of government, e.g. sales and purchases of services, which do not represent an addition to government combined financial activities. Because of the application to 1970 data of the classification set out in *The Canadian system of government financial management statistics* (Statistics Canada Catalogue No. 68-506) gross government revenue and expenditure data for 1970 are not comparable with data for previous years. The inclusion in 1970, for the first time, of financial transactions, considered as originating in the government universe as defined in the above mentioned system, indicates an increase over previous years which did not actually take place. Among such transactions, the principal ones are social insurance levies (e.g. unemployment insurance and workmen's compensation contributions) and contributions to the Canada and Quebec Pension plans.

20.2 Federal government finance

20.2.1 General accounts

Tables 20.2 - 20.6 present financial statistics of the federal government prepared in accordance with the revised concepts as published in *The Canadian system of government financial management statistics*. Financial statistics in Tables 20.7 and 20.8 are extracted directly from the *Public Accounts of Canada*.

Tables 20.2 and 20.3 give details of gross general revenue and expenditure for the years ended March 31, 1972 and 1973. Revenue increased from \$18,550 million to \$21,426 million while expenditures rose from \$18,218 million to \$20,912 million.

Transfers from the federal government to provincial governments, territories and local governments for the years ended March 31, 1972 and 1973 are shown in Table 20.4. Comparable figures for the previous year are available in the *1973 Canada Year Book* pp 819-822.

Table 20.5 provides details of the assets and liabilities of the federal government as at March 31, 1972 and 1973. Table 20.6 analyzes gross bonded debt according to average interest rate, average term of issue and place of payment as at March 31, 1972 and 1973.

In addition to direct gross bonded debt, the Government of Canada has assumed certain contingent liabilities. The major categories of this indirect or contingent debt are the guarantee of insured loans under the National Housing Act and the guaranteed bonds and debentures of the Canadian National Railways. The remainder consists chiefly of guarantees of loans made by chartered banks to the Canadian Wheat Board, to farmers and to university students and of guarantees under the Export Development Act. Table 20.7 provides details of the guaranteed debt of the Government of Canada as at March 31, 1972 and 1973.

Table 20.8 summarizes the public debt position during the period 1969-73 as to interest and amount outstanding. Details of unmatured debt and treasury bills outstanding and information on new security issues of the federal government may be found in the *Public Accounts of Canada*. They are summarized by standard classification in Statistics Canada publication *Federal government finance* (Catalogue No. 68-211).

20.2.2 Individual and corporation taxes

Statistics of income tax collections are gathered at the time the payments are made and are therefore up to date. Over 85% of individual taxpayers are wage- or salary-earners who have almost the whole of their tax liability deducted at the source by their employers. All other taxpayers are required to pay most of their estimated tax during the taxation year. Thus, the

greater part of the tax is collected during the same year in which the related income is earned and only a limited residue remains to be collected when the returns are filed. The collections for a given fiscal year include employer remittances of tax deductions, Canada Pension Plan contributions, unemployment insurance premiums and instalments, embracing portions of two or more taxation years, and year-end payments; they cannot therefore be closely related to the statistics for a given taxation year. As little information about a taxpayer is received when the payment is made and as a single cheque from one employer may frequently cover the tax payment of hundreds of employees, the payments cannot be statistically related to taxpayers by occupation or income. Descriptive classifications of taxpayers are available only from tax returns but collection statistics, if interpreted with the current tax structure and the above factors in mind, indicate the trend of income in advance of the final compilation of statistics. The statistics given in Table 20.9 pertain to revenue collections by the Department of National Revenue, Taxation. The collections are for fiscal years ended March 31.

Individual income tax statistics collected by Statistics Canada are presented in Tables 20.10 - 20.12 on a calendar-year basis and are compiled from a sample of all returns received. Taxpayers and amounts of income and tax are shown for selected cities and by occupational class and income classes.

Table 20.13 gives statistics of corporation positive income tax by industry group by size of assets for 1969-71. Federal and provincial income taxes payable by corporations by industrial division are summarized in Table 20.14.

20.2.3 Estate tax

Prior to April 1, 1964 estates or portions thereof situated in provinces which levied succession duties (British Columbia, Ontario and Quebec) qualified for an abatement of 50% of the federal estate tax otherwise payable. Provinces without succession duty levies received from the federal government a payment equal to 50% of the federal tax on estates situated within their boundaries. Effective April 1, 1964, the federal government undertook to pay to the provinces not levying succession duties an additional amount equal to 25% of the federal tax collected on estates situated within their boundaries (i.e. a total of 75%). At the same time, provinces with succession duty levies were given the option of (a) having estates within their provinces qualify for an additional 25% abatement of the federal estate tax; or (b) receiving a payment in an amount equal to 25% of the federal estate tax payable before any abatement (i.e. one half of the amount collected under the 50% abatement arrangement).

British Columbia accepted the first-mentioned option and raised its own succession duty rates. Ontario and Quebec chose the second. Effective January 1, 1972, the federal government withdrew from the field of inheritance taxation. Thus, upon the settlement of outstanding assessments, all revenue of the provinces relating to taxation upon death will arise from direct provincial tax levies and the transfer aspect will disappear. Provincial succession duties are discussed further in Section 20.6.2.

20.2.4 Excise taxes

Excise taxes collected by the Excise Division of the Department of National Revenue are given for the years ended March 31, 1972 and 1973 in Table 20.15.

Gross excise duties collected for the year ended March 31, 1973 were: spirits \$254.8 million; beer or malt liquor \$166.8 million; tobacco, cigarettes and cigars \$225.8 million; licences \$36,031; for a total of \$647.4 million. A drawback of 99% of the duty may be granted when domestic spirits, testing not less than 50% over proof, are delivered in limited quantities for medicinal or research purposes to universities, scientific or research laboratories, public hospitals or health institutions in receipt of federal and provincial government aid.

20.3 Federal-provincial fiscal relations

Fiscal relations between the federal, provincial and territorial governments take various forms and are governed either by an Act of Parliament or by formal agreements between the two levels of government. Through the equalization program the federal government ensures that public resources benefit all Canadians across the country; under Tax Collection Agreements it acts as a tax collecting agent for some provinces; and under other arrangements the federal government shares in the financing of certain programs. These three types of arrangements, general purpose transfer payments, tax collection agreements and specific purpose transfer payments, are covered in this Section.

20.3.1 General purpose transfer payments

General purpose transfers refer to payments from one level of government to another level which the transferee is not required to use for a specific purpose or for specific purposes. They were formerly identified as "unconditional" transfers. The various programs under which they are paid, as well as their amounts for the fiscal year ended March 31, 1973, are indicated in Table 20.4.

Statutory subsidies, established by the British North America Act, 1867, consist of contributions by the federal government toward the support of the governments and legislatures of the provinces. They include an allowance per head of population, allowances for interest on debt and other special amounts as agreed upon under the terms of the union and subsequent to the union. These subsidies amounted to \$33.8 million in the fiscal year ended on March 31, 1973. The share of federal estate taxes remitted to the provinces in 1972-73 (\$12.4 million) is in respect of deaths which occurred prior to January 1, 1972.

Since 1947 the federal government has shared with the provinces the amounts of federal corporation income tax collected from non-government electric and gas utilities operating within each province. The provincial share was raised to 95% from 50% of the amount collected as of January 1, 1966. The intent of this policy was to make available to provinces tax revenue from companies engaged in the exploitation of provincial natural resources.

The most important payments included in general purpose transfers are made under the equalization program. This program, as it is now known, was established in 1967 and slightly revised in 1972. This revision, however, did not modify the basic philosophy of the program according to which all Canadian citizens are entitled to a standard of public services that is fairly comparable among the various regions of the country. In a country as vast as Canada, natural resources and economic wealth are unevenly distributed across the country: some provinces have above-national-average wealth while others are well below that average. Through the equalization system the federal government makes available, from general revenue it collects in all provinces, part of the nation's wealth to provinces with income lower than the national average income, thus making it possible for these provinces to provide reasonable standards of services without recourse to unduly high levels of taxation.

According to the formula set out in the Federal-Provincial Fiscal Arrangements Act, 1972 and amendments, provincial revenue subject to equalization is divided into 19 revenue sources, for each of which a revenue base is defined. To determine the amount of equalization to which a provincial government is entitled, its population as a proportion of the all-provinces' population and its revenue base as a proportion of the all-provinces' revenue base for each of the 19 revenue sources are calculated. Where the former proportion is higher than the latter for any of the revenue sources, the province has a fiscal capacity deficiency for that revenue source; if the magnitude of these proportions is reversed, the province has a fiscal capacity excess. The total revenue of all provinces for each revenue source is multiplied by each province's respective fiscal deficiency or fiscal excess related to the appropriate revenue source and, for any province, the amount of equalization payable is the sum total of the "deficiency" products less the sum total of the "excess" products.

Total equalization payments to the seven provinces having an over-all fiscal capacity deficiency have increased from \$549.6 million in fiscal year 1967-68 to \$1,137.4 million in the year ended March 31, 1973. Provinces receiving such payments are indicated in Table 20.4.

20.3.2 Tax collection agreements

Tax Collection Agreements, replacing the tax-sharing system in operation since 1951, were introduced in 1962 under the Federal-Provincial Arrangements Act, 1962. Under these agreements, the federal government undertook to collect personal and corporation income taxes on behalf of the provinces. All provinces, except Quebec, signed the agreements in respect of personal income tax, and all provinces except Quebec and Ontario entered into agreements covering the collection of corporation income tax.

An abatement system, introduced in 1962 and amended in 1967, facilitated the establishment by the provinces of their own tax rates. Under this system the abatement was deducted in determining the federal personal income tax payable and this amount, plus any additional tax imposed by the province, constituted the provincial personal income tax payable. The abatement was set in 1967 at 28% of federal "basic tax" for personal income tax and at 10% of the taxable income of corporations for corporation income tax.

The 1967 Act was amended in 1972 in order to adjust the terms of the agreements to the new federal Income Tax Act introduced in 1972 following the tax reform. In the 1972 amendment the abatement system was abandoned as was the reference to federal "basic tax". Instead, the federal rates of personal income tax were adjusted downward for the full amount of the former provincial abatement. This downward adjustment corresponded to 30.5% of "basic federal tax" and is equivalent to the former 28% abatement.

In addition, Part IV of the Federal-Provincial Fiscal Arrangements Act, 1972, provided a guarantee that for five years the provinces would not suffer a loss of income tax revenue as a result of adopting income tax Acts modelled on the new federal Act, provided that their rates are equivalent to those levied under the previous Act. Revenue is guaranteed at a yield level equal to that obtained through the projection of 1971 rates.

20.3.3 Specific purpose transfer payments

This type of transfer payment is generally referred to as conditional grants, that is grants which are to be used for a specific purpose by the receiving government. Most of these grants are made under agreements governing joint federal-provincial programs. Total federal payments to provinces and municipalities of this nature have increased from \$1,816.7 million in 1969-70 to \$3,008.4 million in 1972-73, as shown in Table 20.4.

These programs take three forms: the federal government contributes financial assistance to a program administered by a province; the federal and provincial governments each assume the sole responsibility for the construction, administration and financing of separate aspects of a joint project; or the province contributes financially to a joint program administered by the federal government.

The first category of joint programs is by far the most common. The federal government agrees to make money available to a province on certain conditions such as specification of the field, service or project to which the money must be applied. In addition to administering the programs, the provinces may be required to make financial contributions or to provide certain facilities and to meet certain specified standards of operation. Various programs in the field of social policy are of this kind. For example, the federal government undertakes to contribute to participating provinces a specified share of the costs incurred by the provinces in respect of public hospital insurance programs. The federal contribution in each province is equal to 25% of the average per capita cost of in-patient services in Canada as a whole plus 25% of the average per capita cost of in-patient services in the province, multiplied by the average for the year of the number of insured persons in the province.

Although the hospital insurance program, with its specifications of eligible hospitals, sharable costs and the amount of the federal contribution, is characteristic of many conditional grant programs there are others in which the conditions are nominal. For example, under the Canada Assistance Plan the federal government undertakes to share one half the cost of welfare paid to recipients in need; the scale and conditions of the assistance being determined by the provinces.

Joint programs in the second category — those in which the federal and provincial governments accept sole responsibility for portions of a total project — are not numerous and are generally of a public works nature. The irrigation projects carried out jointly by the Prairie Farm Rehabilitation Administration and the province of Alberta on the St. Mary's and Bow rivers in southern Alberta were of this nature.

Joint programs in the third category are also few in number. The South Saskatchewan River dam was an example: Canada undertook to pay the costs of the dam in the first instance, with Saskatchewan subsequently reimbursing Canada for one quarter of the federal expenditures (up to a maximum of \$25 million) on the dam and reservoir. By March 31, 1968, the full amount had been recovered from Saskatchewan.

Federal transfers to the provinces in the form of specific purpose grants increased from \$75 million in the year ended March 31, 1954, to \$3,044.1 million in 1972-73. The increase is attributable largely to the introduction of the hospital insurance and diagnostic services program in 1958, medicare in 1968, increases in the level of assistance, and the integration of welfare programs under the Canada Assistance Plan which began in 1966-67. In 1972-73 federal contributions to the programs in respect of hospital and diagnostic services, medicare, and welfare programs integrated with and into the Canada Assistance Plan amounted to \$1,355.5 million, \$629.3 million and \$778.5 million, respectively. These amounts include the

value of income tax abatement to Quebec of \$358.8 million and \$106.3 million, respectively. Further details are given in Table 20.16.

In 1965 provinces were given the option to assume full financial and administrative responsibility for certain programs in return for fiscal compensation and to this end, the federal government enacted in April 1965 the Established Programs (Interim Arrangements) Act. The nature and number of programs were itemized in the schedules to the Act. Schedule I listed the major conditional grant programs of a continuing nature and Schedule II listed smaller and more transient programs. The Schedule I programs were: hospital insurance, old age assistance, blind persons allowances, disabled persons allowances, and the welfare portion of unemployment assistance; the technical and vocational training programs for youths who were not yet members of the labour force; and the health grant program, except those elements that involved research and demonstration. The Schedule II programs were: agricultural lime assistance; forestry programs; hospital construction grants; campgrounds and picnic areas; and the roads-to-resources program. The Act was subsequently amended to include the Canada Assistance Plan.

A province wishing to avail itself of the provisions of the Established Programs (Interim Arrangements) Act in respect of a Schedule I program, was required to enter into a supplemental agreement in which it undertook to assume full responsibility for the administration and financing of the program. On the other hand, the federal government undertook to abate, by a specified percentage, the individual income tax on the income of residents of the province, pay associated equalization and make an operating cost adjustment. The operating cost adjustment payment or recovery was to ensure that a province did not suffer or benefit financially through assuming the financing of the federal share of the former joint program. Because of their smaller size and lack of continuity, the compensation associated with a Schedule II program did not provide for federal tax abatement or associated equalization payments. Compensation of these programs was to be paid directly to the province by the federal Minister of Finance.

The Established Programs (Interim Arrangements) Act was designed to provide for an interim period during which a province might assume greater administrative and financial responsibility for the programs listed and during which time more permanent arrangements governing joint programs might be devised. The length of the interim period was set out in the Act for each program and varied from March 31, 1967 to December 31, 1970. The tax abatement associated with Schedule I programs was also set out in the Act and varied from 1% for the health grant program to 14% for hospital insurance. Amendments made to the Act in 1972 extended the length of the interim period for the special welfare and hospital insurance programs to March 31, 1977 and December 31, 1977, respectively. The interim period for the health grants program was not extended beyond March 31, 1972 as this program was being phased out. Also, tax abatement points associated with the hospital insurance program were raised in 1972 to 16 points and with the special welfare program to five points. The increase was occasioned by the reassignment of the one point associated with the defunct health grants program and conversion of the value of tax points to their approximate value under the 1972 revised Income Tax Act. Quebec alone availed itself of the provisions of this legislation.

20.4 Provincial government finance

Because of considerable variation from province to province in administrative structures and, to a lesser extent, in accounting and reporting practices, adjustments have to be made to financial data reported in the public accounts of the provinces and territories to produce statistics which will be comparable between different provinces and with those for the other levels of government. In 1972 the concepts and classifications of the national system of government financial statistics were reviewed and redefined by Statistics Canada (see *The Canadian system of government financial management statistics*, Catalogue No. 68-506). Financial statistics for the years 1971 onward are compiled in accordance with these revisions to the system and are not comparable with data for prior years published in earlier editions of the *Canada Year Book*. An historical revision of these earlier data to conform with the revised concepts and classifications is now in progress but it will be some time before this is completed and published.

Gross general revenue and expenditure for the years ended March 31, 1971 and 1972 are

given in Table 20.17, liabilities in Table 20.18, liabilities (of other governments and entities) guaranteed by provincial and territorial governments are shown in Table 20.19 and more detailed information on outstanding provincial bonds and debentures is contained in Table 20.20.

20.5 Local government finance

Local government taxation. In 1971, the latest year for which complete data are available, local government revenue from taxation rose by 3.5% to \$3,729 million and the rate of collections stood at 99.7%. This rate is not comparable with previous years' rates, since it includes Quebec local governments collections for the first time. Taxes receivable expressed as a proportion of taxation revenue declined slightly to 11.7% compared to 11.8% in 1970. In most provinces, rates of collections improved in 1971 as compared with previous years, while they declined somewhat in the two territories. Conversely, lower percentages of taxes receivable relative to taxation revenue were recorded in Newfoundland, Prince Edward Island, Ontario, Manitoba and Alberta.

Local government revenue, expenditure and debt. As in previous years, gross revenue and expenditure of local governments increased in 1971. However, as indicated in Section 20.4, financial statistics for 1971 cannot be compared with data for prior years because of the introduction of the concepts and classifications set forth in *The Canadian system of government financial management statistics*. Debenture and other long-term debt amounted to \$9,251 million as at December 31, 1971 compared with \$8,748 million as at December 31, 1970 and \$8,290 million in 1969. Details are given in Tables 20.21 - 20.23.

20.6 Tax rates

Taxes are imposed in Canada by the federal government, by provincial governments and by municipalities. The Government of Canada has the right to raise money "by any mode or system of taxation" while the provincial legislatures are restricted to "direct taxation within the province in order to the raising of a revenue for provincial purposes". Thus, the provinces have a right to use only the field of direct taxation and the federal government is not subject to any constitutional restriction in matters of taxation. Municipalities derive their incorporation with its associated powers, fiscal and otherwise, from the provincial government concerned and are thus also limited to direct taxation.

A direct tax is generally recognized as one "which is demanded from the very person who it is intended or desired should pay it". This concept has limited the provincial governments to the imposition of income tax, retail sales tax, succession duties and an assortment of other direct levies. In turn, municipalities, acting under provincial legislation, tax real estate, water consumption and places of business. The federal government levies taxes on income, excise taxes, excise and customs duties, and a sales tax.

Starting in 1941, a series of federal-provincial tax agreements were concluded to promote the orderly imposition of direct taxes. The duration of each agreement was normally five years. Under the earlier agreements, the participating provinces undertook — in return for compensation — not to use, or permit their municipalities to use, certain of the direct taxes. Under more recent arrangements, the federal personal and corporation income tax otherwise payable in all provinces and the estate tax otherwise payable in three provinces were abated by certain percentages to make room for provincial levies.

Federal tax reform amendments which became effective for the most part from the beginning of 1972, included a new personal income tax rate structure which was not designed to be abated in the previous way. At the same time the federal estate tax was terminated. As a result, the arrangement under which federal taxes are abated has general application only for the corporation income tax. All provinces impose taxes on the income of individuals and corporations and five of the 10 provinces impose taxes on property passing at death. Alberta, New Brunswick, Nova Scotia, Prince Edward Island and Newfoundland do not now impose succession duties. As part of the current fiscal arrangements, the federal government has entered into tax collection agreements under which it collects provincial personal income taxes for all provinces except Quebec and provincial corporation income taxes for all provinces except Ontario and Quebec. By the end of 1974 all provinces which impose succession duties will be collecting their succession duties themselves.

20.6.1 Federal taxes

Individual income tax. Personal income tax in Canada is imposed on the basis of residence. Every individual who is resident in Canada at any time during a year is liable for the payment of income tax on all his income. A non-resident is liable for tax only on income from sources in Canada. The term "residence", generally speaking, is the place where a person resides or where he maintains a dwelling ready at all times for his use. There are also statutory extensions of the meaning of "resident" to include a person who has sojourned in Canada for an aggregate period of 183 days in a taxation year, or a person who was during the year a member of the Armed Forces of Canada, or an officer or servant of Canada or of any one of its provinces, or the spouse or dependent child of any such person. The extended meaning of resident also includes employees who go from Canada to work under certain international development assistance programs.

Canadian tax law uses the concepts "income" and "taxable income". The income of a resident of Canada for a taxation year comprises his revenues from all sources inside or outside Canada and includes income for the year from businesses, property, offices and employments. Since January 1, 1972, it has also included one half of any capital gains.

In computing his income, an individual must include benefits from employment, fees, commissions, dividends, annuities, pension benefits, interest, alimony and maintenance payments. Also included are unemployment insurance benefits, scholarships in excess of \$500, benefits under a disability insurance plan to which his employer contributes and other miscellaneous items of income. On the other hand, war service disability pensions paid by Canada or a country that was an ally at the time of the war service, social assistance payments made on a needs-test basis under a prescribed program, compensation in respect of an injury or death paid under a Workmen's Compensation Act of a province and family income security payments do not have to be included in the computation of income.

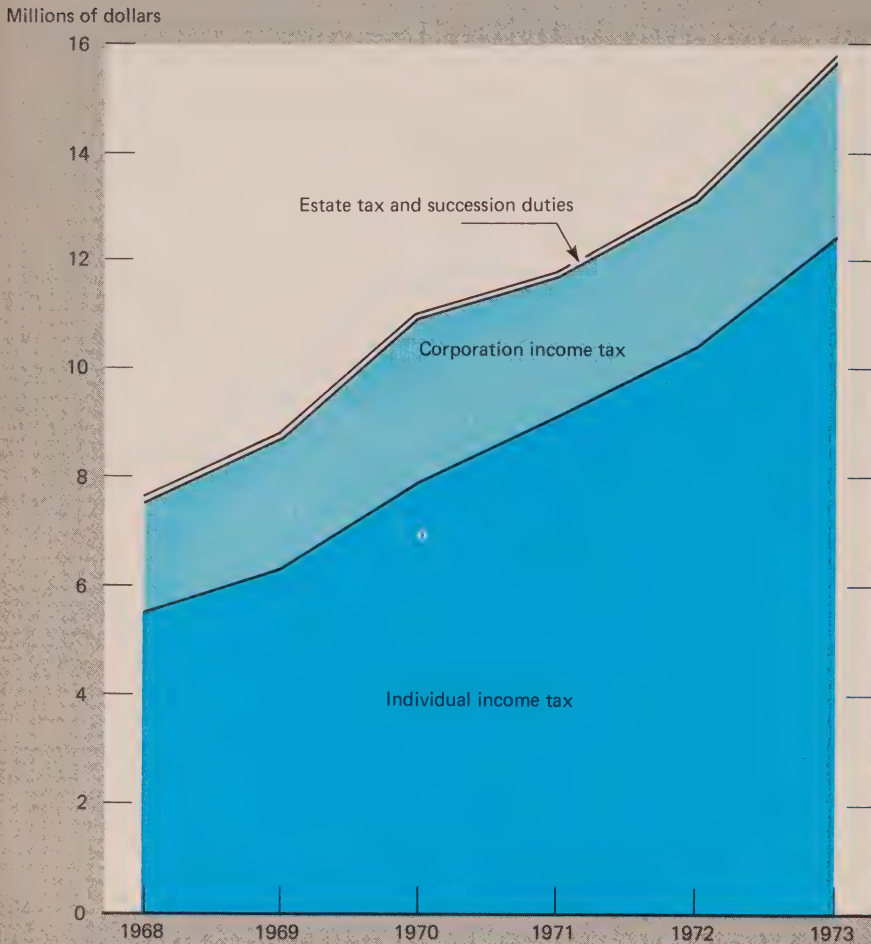
An employee does not have to include in his income, allowances paid to him by his employer to cover travelling expenses to a distant work site, or board and lodging while at the site. In order to qualify, the worker must travel away from his ordinary residence in which he supports his wife or other dependent, the work site must be temporary and the time away from his ordinary residence must be at least 36 hours.

Certain amounts are deductible in computing income. These include contributions to a registered employees pension plan, premiums to a registered retirement savings plan, premiums under the unemployment insurance program, alimony payments and union dues. An employee may deduct 3% of his salary or wages (up to a maximum of \$150 a year) to cover expenses of earning his income. No receipts or details of actual expenditures are necessary to claim this deduction. Expenses of meals and lodging while away from home are deductible by employees who have to travel as they perform their work, such as employees who work on trains or who drive trucks. Where a mother has her children cared for in order that she may work, she may deduct this expense subject to certain limitations. A father may deduct child care expenses where he is the only parent of the family or where the mother is incapable of caring for the children. Expenses of moving to a new work location are deductible from income earned in the new location. These moving expenses may be deducted by salary- or wage-earners, self-employed persons and, in some instances, by students at post-secondary educational institutions. Students attending universities, colleges, high schools or certain other certified educational institutions in Canada may deduct their tuition fees if they exceed \$25 a year. Students in full-time attendance at universities outside Canada are also allowed to deduct their tuition fees.

An individual carrying on a business may deduct his business expenses in computing his income. These include wages, rents, depreciation (called capital cost allowances), municipal taxes, interest on borrowed money, reserves for doubtful debts, contributions to pension plans or profit-sharing plans for his employees, and bad debts.

All individuals must now count half of their capital gains as income. The taxable capital gains of an individual are determined by deducting his capital losses from his capital gains and dividing by two. In the event that an individual's losses exceed his capital gains, \$1,000 of his allowable capital losses may be deducted from other income. Losses not deducted in the year incurred may be carried back one year or forward to future years to be deducted. Capital gains or losses are those realized on the disposition of property. Other gains or losses such as from a lottery or gambling are not included. The sale of personal property at a price not exceeding

Revenue collected by the Department of National Revenue, Taxation, 1968-73



\$1,000, and the sale of a taxpayer's home, do not create a capital gain or loss. A sale or disposition of property is deemed to have taken place when the taxpayer dies or makes a gift of property unless the property is left or given to his spouse. On the first disposition, after the beginning of the system, of capital property owned before the beginning of the system, a capital gain is computed by reference to the higher of cost or valuation-day value and a capital loss by reference to the lower of cost or valuation-day value. Thereafter the capital gain or capital loss on the disposition of a capital property is determined by reference to the property's adjusted cost base. The adjusted cost base is, subject to a number of adjustments, the cost to the taxpayer of the property. When property is acquired after valuation day, actual cost plus or minus adjustments after that date will give the adjusted cost basis. Valuation day for purposes of shares that are publicly traded on Canadian stock exchanges was December 22, 1971 and the valuation day for all other property, such as bonds, rental property, cottages or shares in a private company was December 31, 1971. Special rules apply for individuals who become, or cease to be, residents of Canada. Gains arising out of the conduct of a business continue to be fully taxable.

Having computed his income, the individual then calculates his taxable income by deducting certain exemptions and deductions. Before 1974 the levels of exemptions and

deductions were fixed from time to time by Parliament. The introduction in the 1974 taxation year of a mechanism for indexing personal income tax will result in automatic adjustments each year, to reflect the inflation rate, in the levels of exemptions and deductions. The adjusted personal exemptions and deductions for the 1974 taxation year are: for single status, \$1,706; for married status, \$3,198; for dependent children under age 16, \$320 for each child; for other dependents (as defined in the law), including dependent children over age 15 and under 21 or over 20 and attending school, \$586 each dependent; where the taxpayer is 65 years of age or over, an additional \$1,066, where the taxpayer is blind or confined for the whole of the taxation year to a bed or a wheelchair, an additional \$1,066, charitable donations, up to 20% of income; and medical expenses, the amount in excess of 3% of income. In lieu of claiming deductions for charitable donations and medical expenses an individual may claim a standard deduction of \$100.

The extra deduction for married status is reduced where the taxpayer's spouse has income in excess of \$313. The deduction of \$320 for supporting a child is reduced where the child has income in excess of \$1,166 and the deduction of \$586 is reduced where the dependent has income in excess of \$1,219. The amount of the guaranteed income supplement, which is a payment made to individuals who have little or no income in addition to their old age pension is deductible in computing taxable income. Individuals who have incurred business losses in other years may deduct these in computing taxable income.

As already stated, an individual who is resident in Canada is taxed on his income from both inside and outside Canada. An individual who is not resident in Canada at any time during the year but who carries on business in Canada or who earns salary or wages in Canada is taxed on the income earned in Canada. In computing taxable income earned in Canada, such a non-resident individual is allowed to deduct that part of the exemptions and deductions that may reasonably be attributed to the income earned in Canada. An individual who ceases to be a resident of Canada during the year or who becomes a resident during the year so that he is resident for only part of the year is subject to income tax as a resident of Canada on only that part of his income for the year received while he is resident in Canada. In these circumstances, the deductions from income permitted in determining taxable income are the amounts which may reasonably be considered as applicable to the period during which he is resident in Canada.

A non-resident who disposes of taxable Canadian property (shares of Canadian public corporations are excluded unless ownership exceeds 25%) is liable for tax on one half of any capital gain. Capital gains or losses from the disposal of taxable Canadian property are combined with the non-resident's Canadian employment or business income. This taxation of capital gains is subject to restrictions in a number of tax treaties between Canada and other countries.

Two provisions were enacted in 1971 to provide for averaging income over a period of years where income for a year is unusually high. The first of these is an averaging calculation that will be made by the Department of National Revenue where an individual's income for the year is 20% more than the average of his incomes for the preceding four years and 10% more than his income for the immediately preceding year. This calculation, which will be made without application by the taxpayer, will reduce the effects of the progressive schedule of rates upon an unusual increase in income in the year. The calculation will first be made for 1973, using 1972 as a base. It will not be possible to use four preceding years in the base until 1976. The second averaging device, which first became effective for 1972, is by the purchase of a special type of annuity contract called an income-averaging annuity. The cost of this annuity contract is deductible from income in the year it is purchased and the annuity payments are included in income when received. Only certain kinds of income may be used to purchase an income-averaging annuity. These include capital gains, a lump sum from a pension plan, proceeds from a literary or artistic work or amounts received from activities as an athlete, musician or public entertainer.

The amount of tax is determined by applying a progressive schedule of rates to taxable income. The tax bracket limits are adjusted yearly by means of the indexing mechanism to reflect the rate of inflation. Thus taxpayers are prevented from being pushed into higher marginal tax brackets in the absence of real growth in their income. The schedule of rates starts at 12% on the first \$533 of taxable income (first unit) and increases to 47% on taxable income in excess of \$63,960. The Income Tax Act provides that the rate of tax on the first

bracket of taxable income will be reduced to 9% in 1975 and 6% in 1976.

After all calculations are made, there may be deducted from the tax otherwise payable an amount, called the federal tax credit, equal to the greater of \$100 or 5% of tax payable to a maximum of \$500.

Individuals who reside in the Yukon Territory or the Northwest Territories or who reside outside Canada but are deemed to be residents in Canada for tax purposes (such as diplomats and others posted outside the country) must pay an additional tax of 30% of their tax otherwise payable. This tax is intended to correspond in an approximate way to the income tax imposed by the provinces on their residents.

An individual who receives a taxable dividend from a Canadian corporation is allowed to deduct an amount called a dividend tax credit from his tax otherwise payable. This is in recognition of the fact that the earnings from which the dividend is paid have borne corporation income tax. It also provides encouragement for Canadians to participate in ownership of Canadian corporations. The individual increases the amount of the dividends he has received by one third and includes this additional one third in his income. He then deducts from his tax an amount equal to four fifths of the additional one third that was included in his income.

An individual who receives income from foreign sources may deduct from his tax the amount of tax he has paid to a foreign government on his foreign source income. This deduction may not exceed the Canadian tax related to such income.

An individual who earns income in Quebec may deduct 24% of his tax attributable to such income. This abatement of tax is in recognition of the fact that Quebec entirely finances certain programs which are partly financed by the federal government in other provinces.

To a very large extent, individual income tax is payable as the income is earned. Taxpayers in receipt of salary or wages have tax deducted from their pay by their employer and in this way pay nearly 100% of their tax liability during the calendar year. The balance of the tax, if any, is payable at the time of filing the tax return on or before April 30 of the following year. Individuals with more than 25% of their income in a form not subject to tax deductions at the source must pay tax by quarterly instalments throughout the year. Returns of these individuals must be filed on or before April 30 of the following calendar year. Farmers and fishermen pay two thirds of their tax on or before December 31 each year and the remainder on or before April 30 of the following year. Table 20.24 shows the amount of personal income tax payable on various levels of income in 1974.

Corporation income tax. The Income Tax Act levies a tax upon the income from anywhere in the world of corporations resident in Canada and upon the income attributable to operations in Canada of non-resident corporations carrying on business in Canada. One half of capital gains must be included in income. In computing their income, corporations may deduct operating expenses including municipal real estate taxes, reserves for doubtful debts, bad debts and interest on borrowed money. The deduction for interest includes interest on money borrowed to acquire shares in another corporation. There is a limitation on the deduction of interest paid to non-residents. One half of capital losses may be deducted from the capital gains included in income.

Corporations may deduct over a period of years the capital cost of all depreciable property. The yearly deductions of normal capital cost allowances are computed on the diminishing balance principle. Regulations issued under authority of the Income Tax Act established a number of classes of property and maximum rates. Typical rates include 5% and 10% for buildings, 20% for machinery and 30% for automobiles. Where property is disposed of for more than the amount to which it has been written down by capital cost allowances, the excess allowances are "recaptured" through an addition to income or by an adjustment to the undepreciated balance for the class of property.

Accelerated depreciation (full write-off in two years) is allowed in respect of structures and equipment acquired in the period April 27, 1965 to December 31, 1973 to prevent water pollution, in the period March 13, 1970 to December 31, 1974 to prevent air pollution, and manufacturing equipment acquired in the period May 8, 1972 to the end of 1974.

A corporate taxpayer who does not elect to receive a grant under the Training-on-the-Job Program may deduct 60% of approved wage costs incurred in the period after October 1971 and before April 1974. This deduction is in addition to the normal deduction for wages. Ex-

penditures on scientific research related to the business of the taxpayer may be written off for tax purposes in the year when incurred.

A corporation whose principal business is mining, oil production and allied activities may deduct the costs of exploration and development in Canada against any income in the year the costs were incurred or in subsequent years. Taxpayers who do not meet the "principal business" test are entitled to deduct exploration and development expenses from mining and petroleum income. Starting in 1972, these expenses will be deductible from other income over a period of time if they exceed mining and petroleum income. Taxpayers may deduct certain foreign drilling expenses from directly related foreign-source income. Starting in 1972, all taxpayers may put foreign exploration and development expenses in a separate asset class and deduct them over a period of time if they exceed income from foreign mineral and petroleum properties.

The profits derived during the first three years of operation of a new mine are exempt from income tax until December 31, 1973. In place of the three-year tax exemption there will be an immediate write-off of capital equipment and facilities for a new mine to the extent of income from the mine. The assets eligible for this accelerated depreciation include buildings, mining machinery, processing facilities and "social capital" such as access roads, sewage plants, housing, schools, airports and docks. The accelerated write-off provision for new mines will also apply in the case of a major expansion of an existing mine where there has been at least a 25% increase in milling capacity. The list of eligible assets is the same as for new mines except that "social capital" does not qualify.

Taxpayers operating mines, oil wells, gas wells and wells for extracting potash by the solution method have been allowed a depletion allowance, usually computed as a percentage of profits (after deduction of capital cost allowances, exploration and drilling expenses and certain interest expenses) derived from mineral, oil or gas production. This allowance is in addition to capital cost allowances on buildings, machinery and similar depreciable assets used by the taxpayer and the deduction of his exploration and drilling expenses. This will continue until the end of 1976 after which a taxpayer will be able to deduct depletion only if it has been "earned" by exploration. For every \$3 of eligible expenditures, a taxpayer will earn the right to deduct \$1 of depletion. Eligible expenditures made after November 7, 1969 can be accumulated for the purpose of calculating earned depletion for 1977 and subsequent years.

Taxpayers operating timber limits receive an annual cost allowance which is a rateable proportion of the amount invested in the limit and is based on the amount of timber cut in the year.

In computing taxable income, corporations, with certain exceptions, may deduct dividends received from other Canadian taxable corporations and also from certain non-resident affiliates. Business losses may be carried back one year or forward five years and deducted in computing taxable income. Corporations may also deduct donations to charitable organizations up to a maximum of 20% of their income.

The general rates of tax payable by corporations on their taxable income are as follows: 1972, 50%; 1973, 49%; 1974, 48%; 1975, 47%; 1976 and subsequent years, 46% except that starting January 1, 1973 the effective rate for manufacturing and processing profits is 40%. These rates of tax are reduced by 10 percentage points on income earned in a province. This "provincial abatement" is provided to make room for provincial income taxes. At the present time, provincial rates of corporate income tax range from 10% to 13%. For profits earned in the period July 1, 1971 to December 31, 1972, there is a temporary tax reduction equal to 7% of the tax otherwise payable before the 10 percentage points provincial abatement.

A "small business deduction" reduces the rate of tax on certain business income to 25%. This concession is restricted to Canadian corporations which are not controlled by a non-resident corporation or by a Canadian public corporation. It applies only to income from an active business carried on in Canada and not to investment income. The maximum amount of taxable income on which the deduction may be calculated is \$50,000 in any one year. A corporation is entitled to this deduction only until it has accumulated \$400,000 of taxable income commencing with taxation years starting after 1971. The payment of taxable dividends reduces the accumulation of taxable income for purposes of this limitation. The rate of 25% referred to will not be affected by the gradual reduction in the general federal rate of corporation income tax between 1972 and 1976 but this 25% rate is reduced by the 10 percentage points provincial

abatement. Starting January 1, 1973, this 25% rate is reduced to 20% for Canadian manufacturing and processing profits.

A corporation that qualifies as an "investment corporation" pays tax at a rate of only 25%. This rate is also reduced by the provincial abatement.

The investment income (other than dividends) of a private corporation is subject to the general rate of tax (i.e. 50% in 1972 becoming 46% in 1976 less the provincial abatement) but an amount not exceeding 25% of this income is refunded when dividends are paid to shareholders.

Dividends received by a private corporation from a Canadian corporation controlled by it are deductible in computing its taxable income (except where paid out of designated surplus or under conditions that entitle the paying corporation to a refund). Dividends received by a private corporation from portfolio investments are subject to a special 33⅓% tax but this is refunded when dividends are paid to shareholders.

A corporation may elect to pay a special 15% tax on its 1971 undistributed income on hand. Dividends received from this tax-paid undistributed income are not included in the income of the receiving shareholder but the amount of the dividend will reduce the adjusted cost basis of the shares for capital gains tax purposes. Dividends paid from the untaxed half of a corporation's capital gains are also excluded from the income of the recipient shareholders but with no similar reduction in the adjusted cost base of the shares for capital gains tax purposes.

Special rules are provided for the taxation of special-purpose companies such as mutual fund corporations, life insurance companies, non-resident-owned investment companies and co-operatives.

In addition to the reduction equal to 10% of taxable income earned in a province, a corporation may reduce its tax by a credit for taxes paid to foreign governments on foreign source income. This credit may not exceed the Canadian tax related to such income. A corporation may also deduct from its tax an amount equal to two thirds of a provincial tax on income from logging operations not exceeding 6⅔% of its income from logging operations in the province. (At present only Quebec and British Columbia impose logging taxes.) Commencing in 1977, a mining corporation will be able to claim an extra federal tax abatement of 15% of its production profits in a province.

Corporations are required to pay their tax by monthly instalments throughout their taxation year. Any balance of tax remaining has to be paid by the last day of the third month following the close of the taxation year, and the return for the year must be filed by the last day of the sixth month following the close of the taxation year.

Taxation of non-residents. An individual or corporation not resident in Canada is liable for Canadian income tax on income from employment or from carrying on business in Canada and on one half of capital gains less losses on disposals of "taxable Canadian property". For this purpose taxable Canadian property includes: real property interests situated in Canada; assets used in carrying on business in Canada; interests in certain partnerships and trusts; shares in a corporation resident in Canada other than a public corporation; and shares in Canadian public corporations where the non-resident owns a 25% or greater interest. The taxation of capital gains may be restricted by the provisions in tax treaties between Canada and other countries.

The expression "carrying on business in Canada" includes producing, growing, packaging or improving any article in Canada and also soliciting orders or offering anything for sale in Canada through an agent or servant. However, this is usually modified by tax treaties so that an enterprise of the other country is taxed by Canada on its industrial and commercial profits only if it carries on business through a permanent establishment in this country. Tax treaties also provide some exemptions from tax on remuneration for services.

The taxable income of non-resident individuals derived from employment or carrying on business or from capital gains in Canada is taxed under the same schedule of rates as Canadian resident individuals.

Income earned by non-resident corporations carrying on business or from capital gains in Canada is taxed at the regular rates of corporation income tax. The distributable business earnings of a branch of a non-resident corporation are also subject to an additional tax often referred to as a branch tax. This tax applies to the branch earnings net of taxes that are not reinvested in the business in Canada. The branch tax, which is imposed at the same rate as the

non-resident withholding tax on dividends referred to below, is designed to place non-resident corporations that carry on business through a branch in Canada in a comparable position to those non-residents that conduct their Canadian operations through a separate company incorporated in Canada.

Certain specific items of income paid to non-residents from sources in Canada are subject to tax withheld at the source by the Canadian payer. This non-resident withholding tax applies to interest (except interest on certain bonds and interest paid to certain exempt lenders), dividends, rents, royalties, management fees, income from a trust or estate, alimony, pension benefits (other than the old age security pension and up to \$1,290 of Canada Pension Plan or Quebec Pension Plan benefits), proceeds from deferred income plans and the taxable portion of annuities. The rate of this tax is generally 15% but the rate on royalties from motion picture and television films is only 10% and the standard rate of 15% on dividends is reduced to 10% in the case of dividends paid by a corporation that has a degree of Canadian ownership. Generally, a corporation is regarded as having a degree of Canadian ownership where 25% of its equity and voting shares are owned by Canadians and/or corporations controlled in Canada, or where the voting shares of the corporation are listed on a Canadian stock exchange and no more than 75% of its issued outstanding voting shares are owned by a non-resident alone or in combination with related persons.

The Income Tax Act provides that the rate of the above-mentioned non-resident withholding tax will become 25% in 1976, except for the rate on dividends paid by a corporation with a degree of Canadian ownership which will be 20%. These rates may be modified by tax treaties.

Non-residents who receive from sources in Canada only the kinds of income subject to the non-resident withholding tax do not file returns to Canada. However, those who receive rents on real property, timber royalties, pension benefits or proceeds from deferred income plans may elect to file returns and be taxed at personal or corporation rates as the case may be.

Estate and gift taxes. The federal government formerly imposed an estate tax and a tax on gifts. These taxes do not apply in the case of a death occurring after 1971 or to a gift made after 1971.

Excise taxes. The Excise Tax Act levies a general sales tax and special excise taxes. These taxes are levied on goods imported into Canada as well as on goods produced in Canada. They are not levied on goods exported.

The general sales tax is at the rate of 12%. It is levied on the manufacturer's sale price of goods produced or manufactured in Canada or on the duty-paid value of goods imported into Canada. "Duty-paid value" includes the amount of customs duties, if any. For alcoholic beverages and tobacco products the sale price for purposes of the sales tax includes excise duties levied under the Excise Act. The rate of sales tax on a long list of building materials is 11% instead of 12%.

Some goods are exempt from sales tax. Drugs, electricity, fuels for lighting or heating, children's clothing and footwear and most foodstuffs are exempt, and also articles and materials purchased by public hospitals and certain welfare institutions. The products of farms, forests, mines and fisheries are, to a large extent, exempt as well as most equipment used in farming and fishing. Machinery and equipment used directly in production and materials consumed or expended in production are also exempt, and also equipment acquired by manufacturers or producers to prevent or reduce pollution to water, soil or air from their manufacturing operations. A number of items are exempt when purchased by municipalities. These and other exemptions are set forth in the schedules to the Excise Tax Act.

The Excise Tax Act also imposes a number of special excise taxes which are in addition to the sales tax. Where these are ad valorem taxes they are levied on the same price or duty-paid value as the general sales tax. The special excise taxes levied at present are given in Table 20.25.

Excise duties. The Excise Act levies taxes (referred to as excise duties) upon alcohol, alcoholic beverages (other than wines) and tobacco products. These duties are not levied on imports but the customs tariff applies special duties to these products equivalent to the excise duties levied on the products manufactured in Canada. Exported goods are not subject to excise duties.

The duties on spirits are on a proof gallon basis. They do not apply to denatured alcohol

intended for use in the arts and industries, or for fuel, light or power, or any mechanical purposes. The various duties are as follows: on every gallon of the strength of proof distilled in Canada, \$14.25; on every gallon of the strength of proof used in manufacture of: medicines, extracts, pharmaceutical preparations, etc., \$1.50 a gallon; approved chemical compositions, 15 cents a gallon; spirits sold to a druggist and used in the preparation of prescriptions, \$1.50 a gallon; imported spirits when taken into a bonded manufactory in addition to other duties, 30 cents a gallon.

Canadian brandy (a spirit distilled exclusively from juices of native fruits without the addition of sweetening materials) is subject to an excise duty of \$12.25 a proof gallon. All beer or other malt liquor is subject to a duty of 42 cents a gallon.

Excise duties are imposed on tobacco, cigars and cigarettes in addition to the special excise taxes which have already been described. The rates of excise duty are as follows: on manufactured tobacco of all descriptions, except cigarettes, 35 cents a lb.; cigarettes weighing not more than three lb. per thousand (nearly all of the cigarettes used in Canada are of this type), \$4 a thousand; cigarettes weighing more than three lb. per thousand, \$5 a thousand; cigars, \$2 a thousand; Canadian raw leaf tobacco when sold for consumption, 10 cents a lb.

Total taxes on tobacco products. The aggregate of taxes imposed on tobacco products under the Excise Tax Act and the duties imposed under the Excise Act are: cigarettes, \$10 a thousand (20 cents a pack of 20 cigarettes) plus the 12% sales tax on the manufacturer's sale price; pipe and cut tobacco, \$1.25 a lb. plus the 12% sales tax on the manufacturer's sale price; cigars, \$2 a thousand plus the 17.5% special excise tax and the 12% sales tax on the manufacturer's sale price.

Customs duties. Most goods imported into Canada are subject to customs duties at various rates as provided by tariff schedules. Customs duties which once were the chief source of revenue for the country have declined in importance as a source of revenue to the point where they now provide less than 10% of the total. Quite apart from its revenue aspects, however, the tariff still occupies an important place as an instrument of economic policy.

The Canadian Tariff consists mainly of three sets of rates, namely, British Preferential, Most-Favoured-Nation and General. The British Preferential rates are, with some exceptions, the lowest rates. They are applied to imported dutiable commodities shipped directly to Canada from countries within the British Commonwealth. Special rates lower than the ordinary preferential duty are applied on certain goods imported from designated Commonwealth countries.

The Most-Favoured-Nation rates apply to goods from countries that have been accorded tariff treatment more favourable than the General Tariff but which are not entitled to the British Preferential rate. Canada has Most-Favoured-Nation arrangements with almost every country outside the Commonwealth. The most important agreement providing for the exchange of Most-Favoured-Nation treatment is the General Agreement on Tariffs and Trade.

The General Tariff applies to imports from countries not entitled to either the British Preferential or Most-Favoured-Nation treatment. Few countries are in this category and in terms of trade coverage are negligible.

In all cases where the tariff applies there are provisions for drawbacks of duty on imports of materials used in the manufacture of products later exported. The purpose of these drawbacks is to assist Canadian manufacturers to compete with foreign manufacturers of similar goods. There is a second class of drawbacks known as "home consumption" drawbacks. These apply to imported materials used in the production of specified classes of goods manufactured for home consumption.

The tariff schedules are too lengthy and complicated to be summarized here but the rates which apply on any particular item may be obtained from the Department of National Revenue which is responsible for administering the Customs Tariff.

20.6.2 Provincial taxes

All of Canada's 10 provinces levy a wide variety of taxes, fees, licences and other forms of impositions within their respective territory. Among such levies, a relatively small number account for about 75% of total provincial revenue from own sources. Only the more important levies are briefly described here. Complete details may be found in *Principal taxes and rates*, Statistics Canada Catalogue No. 68-201.

Personal income tax. All provincial governments levy a tax on the income of individuals who reside within their boundaries and on the income earned by non-residents from sources within their boundaries. Rates of provincial individual income taxes are expressed as percentages of "basic federal tax", with the exception of Quebec which has its own system. "Basic federal tax" on which provinces apply their rates is after the dividend tax credit but before any foreign tax credit and special federal tax reductions. There was little change in provincial rates from 1972 to 1973. Provincial rates at the beginning of 1974 were as follows: Newfoundland, 40%; Prince Edward Island, 36%; Nova Scotia, 38.5%; New Brunswick, 41.5%; Ontario, 30.5%; Manitoba, 42.5%; Saskatchewan, 40%; Alberta, 36%; and British Columbia, 30.5%. Income tax is collected by the federal government for all these provinces.

In Quebec, provincial individual income tax is not related to basic federal tax but is levied at graduated rates that progress from 10% on the first \$2,000 of taxable income to a maximum of 28% on income exceeding \$60,000. The determination of taxable income for Quebec tax is based on exemptions and deductions which, with the exception of deductions for dependent children under age 16, are similar to those for federal tax. Instead of the income tax exemption for children under 16 years of age, Quebec pays a supplementary family allowance benefit which increases from \$30 a year for the first child to a maximum amount of \$70 when the number of children exceeds five. Quebec taxpayers who have married status for tax purposes pay no provincial income tax unless their net income exceeds \$5,200; for all other taxpayers, net income must not exceed \$2,600 to be tax exempt. In addition, for married and single taxpayers whose income is between \$5,200 and \$5,785, and \$2,600 and \$2,850, respectively, the amount of tax payable cannot be more than 50% of the difference between their net income and the amount of their exemptions. The government of Quebec collects its own personal income tax.

Both Ontario and Manitoba have introduced tax credit schemes which are administered, at a small fee, through the tax collection machinery of the federal Department of National Revenue. These plans are designed to alleviate the burden of certain other taxes or of specified categories of taxpayers by means of an income tax credit or rebate. Ontario's scheme encompasses income tax for persons aged 65 and over, the general sales tax and the municipal property tax. The total amount of the income tax credit to which a taxpayer is entitled is related to his income. The maximum reduction that can be claimed was established at \$500 in 1974. The Manitoba tax credit scheme includes a reduction in income tax supplementing the federal adjustment for increases in the cost of living, and a property tax credit which varies between \$100 and \$200 in respect of owner-occupied dwellings and rented premises.

Corporation income tax. All provinces levy a tax on the taxable income of corporations derived from activities carried out within their boundaries. In all provinces except Ontario and Quebec, the provincial tax imposed on taxable income in the province is determined on the same basis as for federal income tax. In Ontario and Quebec, the determination of taxable income for purposes of provincial tax follows closely the federal rules. Seven of the 10 provinces levy corporate income taxes at rates in excess of the 10% abatement allowed by the federal government. The rate that applies in Alberta is 11%; in British Columbia, Saskatchewan, Ontario and Quebec, 12%; and in Newfoundland and Manitoba, 13%. All provinces except Ontario and Quebec have signed agreements for the collection of the corporation income taxes by the federal government.

Succession duties. The provinces of Quebec, Ontario and British Columbia have been imposing and collecting succession duties for a long period of time, and began to levy a gift tax in 1972 when the federal government withdrew from the estate and gift tax fields. Since the latter were shared with the provinces, whether or not they themselves levied succession duties, the federal withdrawal from these fields of taxation meant a potential loss of revenue to provinces without succession duties. For such provinces the federal government agreed to collect for three years any succession duties and gift taxes they might wish to levy.

Quebec, Ontario and British Columbia maintained their own systems, but the two latter provinces chose to have their gift tax collected by the federal government. Of the remaining provinces, with the exception of Alberta which has no succession duties or gift taxes, only Manitoba and Saskatchewan are still levying succession duties and gift taxes in 1974, for which the federal government is the collecting agent. The other four provinces which had enacted succession duty and gift legislation in 1972, rescinded their related Statutes in 1973 or in the spring of 1974.

Provincial succession duties consist of levies on the value of the inheritance left by a deceased person. Two rates are normally applied: one which increases in relation to the total value of the estate, and one which varies according to the value of the inheritance received by each heir. Basic abatements and exemptions take into account the degrees of affinity of the heirs to the deceased.

Hospitalization and medical care insurance premiums. Three provinces and one territory were still levying premiums in 1974 and one province a payroll tax and a special income tax toward financing the provincial share of their hospitalization and medical care programs. In the other provinces, the provincial share of these programs is financed through their general revenue funds. Ontario has combined hospitalization and medical care insurance premiums into monthly rates of \$11.00 for single persons and \$22.00 for a family. No premiums are paid by welfare recipients or by persons 65 years of age and over. In Alberta, hospitalization and medical care annual premiums are combined and are set at \$69.00 for single persons and \$138.00 for families. Persons aged 65 and over do not pay premiums nor do welfare recipients or residents with no taxable income. Only the medical care program is financed through premiums in British Columbia at a monthly rate of \$5.00 for single persons, \$10.00 for a family of two and \$12.50 for a family of more than two persons. The province subsidizes 90% of the premiums of persons with no taxable income and 50% for persons with a taxable income not in excess of \$1,000 in the previous year. In the Yukon Territory, medical care premiums are on a monthly basis as follows: \$5.00 for single persons, \$10.00 for a family of two and \$12.50 for a family of more than two persons. The Yukon Territory subsidizes 100% of the premiums of persons with no taxable income, 50% of the premiums of single persons with taxable income of less than \$500, of families of two persons with taxable income of less than \$1,000 and of families comprising more than two persons with taxable income less than \$1,300. Quebec finances its medical care program through a payroll tax at a rate of eight tenths of 1% of gross salaries paid by employers and through a special income tax of eight tenths of 1% on the net income of individuals. In the latter case, the maximum annual amount is \$125, if at least three quarters of the net income is made up of salaries; in other cases the maximum payable is \$200. The hospitalization program is financed through the province's general revenue fund.

Retail sales taxes. Retail sales taxes are levied on the final purchaser or user and are collected by the retailer. All provinces except Alberta levy this type of tax at rates as follows: Nova Scotia 7%; Newfoundland, Prince Edward Island, New Brunswick and Quebec, 8%; Manitoba, Saskatchewan and British Columbia, 5%. Ontario has a dual rate structure: 7% is charged on most taxable items; 10% on amusement, meals over \$4.00, beer and spirits. These levies apply to tangible taxable commodities sold, with varying exemptions, for consumption in the province and to a few selected services, for example: to telephone services in all provinces; in Quebec, to telecommunications, in Prince Edward Island, to laundry and dry-cleaning services, to accommodations, and to labour costs of repairs and installations; in New Brunswick, to telecommunications, to meals, hotel and motel charges and to laundry and dry-cleaning charges; and in Manitoba, to a broad range of services including dry-cleaning, furniture repairs, motel accommodation, etc. The sales taxes do not apply to goods sold for delivery in other provinces or to exported commodities. All provinces imposing sales taxes provide comprehensive exemptions for foodstuffs and drugs; in Quebec and New Brunswick, pharmaceutical products are exempt only when sold on prescription. In British Columbia a 5% levy on accommodations is made under the Hotel and Motel Room Tax Act and 8% in Quebec under the Meals and Hotels Tax Act.

Amusement taxes and race track taxes. Each of the provinces with the exception of Newfoundland, Alberta, Saskatchewan and British Columbia has a tax on admission to places of entertainment. In Quebec, this tax is collected by the municipalities which retain the proceeds. The tax on admissions is within the range of 5% to 15%. In addition, all provinces either under the same statutory authority or separate statutes tax money wagered on horse races. The rates of taxation are as follows: Newfoundland, Nova Scotia and New Brunswick, 11%; Prince Edward Island, 11.5%; Manitoba and Saskatchewan, 10%; Alberta, 5%; Quebec, 7% on ordinary pools and 9% on special pools; Ontario, 7% (a tax of 7% is also levied on the amount gained from a winning ticket). In British Columbia the tax is 8% of which 1% is earmarked to increase the racing purses for horses bred, born and raised in British Columbia.

Gasoline and diesel fuel oil taxes. Each of the 10 provinces imposes a tax on the purchase of gasoline by motorists and truckers. The rates vary from 10 cents a gallon in Alberta to 21 cents in Prince Edward Island and 25 cents in Newfoundland. The amount of tax borne by one gallon of gasoline and diesel fuel, respectively, in each province is: Newfoundland 25 cents, 25 cents; Prince Edward Island 21 cents, 25 cents; Nova Scotia 21 cents, 27 cents; New Brunswick 20 cents, 23 cents; Quebec 19 cents, 25 cents; Ontario 19 cents, 25 cents; Manitoba 15 cents, 18 cents; Saskatchewan 12 cents, 16 cents; Alberta 10 cents, 12 cents; British Columbia 15 cents, 17 cents.

A number of activities are exempt or partially exempt from motive fuel taxation. Generally speaking, these pertain to gasoline and diesel fuel used by producers of primary products, commercial fishermen and municipal governments.

Motor vehicle licences and fees. Each province levies a fee on the annual registration of motor vehicles, which is compulsory. Upon registration, a vehicle is issued with licence plates. The rates of fee vary from province to province and, in the case of passenger cars, may be assessed on the weight of the vehicle, the wheel base, the year of manufacture, the number of cylinders of the engine, or at a flat rate. The fees for commercial motor vehicles and trailers are based on the gross weight for which the vehicle is registered, i.e. the weight of the vehicle empty plus the load it is permitted to carry. Every operator or driver of a motor vehicle is required to register periodically and pay a fee for a driver's licence. The licences are valid for periods of from one to five years and the fees vary from \$1 to \$7 a year.

Taxes and royalties on mining, oil and natural gas production. All provinces except Prince Edward Island levy taxes or royalties on the net income from mining operations and petroleum and natural gas production. Newfoundland, Manitoba, Saskatchewan, Alberta and British Columbia also impose a tax on the assessed value of minerals.

Mining operations in Newfoundland, with the exception of iron ore which is taxed separately, are subject to a tax of 5% on net income. Nova Scotia places specific taxes on income derived from various levels of mining production. The tax levied by New Brunswick ranges from 8% to 12% on the profits of mining companies. Quebec imposes a tax ranging from 9% to 15% on the net profits of mining companies in excess of \$50,000. Ontario's tax on the profits of mining companies varies from 0% on the first \$100,000 to 40% on profits over \$40 million. Manitoba imposes a flat rate of 23% if mining profits exceed \$50,000; for lesser profits the tax is 6%. Saskatchewan levies a tax ranging from 5.0% to 12.5% on the net profit of mining companies (metallic metal and uranium). British Columbia's rate of mining taxation is 2.5% of the value of designated minerals sold, disposed of, or used by a producer.

Saskatchewan, Alberta and British Columbia impose substantial royalties on oil (both crude and synthetic), natural gas and its by-products, and a number of other minerals of lesser importance.

Tax on logging operations. Quebec and British Columbia levy a tax on income from logging operations of individuals, partnerships, associations or corporations. In these two provinces the rate of taxation is 10% on net income in excess of \$10,000 (if the net income is greater than \$10,000 the whole amount is taxable with no basic exemption). In Quebec, 33.3% and in British Columbia, 20% of the tax is allowed as a deduction from provincial corporation income tax or, in Quebec, from the provincial income tax. For both provinces, 66.7% of the provincial tax is deductible from federal income tax.

Business taxes. Quebec, Ontario and British Columbia are the only provinces to impose a tax on paid-up or utilized capital of corporations which operate within their boundaries. The rate for Quebec and Ontario is one fifth of 1% while British Columbia's is one tenth of 1%.

Quebec has a place-of-business tax which is generally \$50 but is reduced to \$25 when the paid-up capital is less than \$25,000; in the case of loan companies, the tax is \$100 when fixed capital exceeds \$100,000. Quebec also levies special taxes on certain kinds of companies such as banks, railway, express, trust, sleeping-car, parlour-car and dining-car companies.

Prince Edward Island charges special annual licence fees to most insurance companies, banks, acceptance companies, chain theatres and chain stores, steamship companies, telephone, telegraph and electric light companies and brokers, as well as nominal licence fees to unincorporated companies, the latter being similar to filing fees in other provinces.

Land transfer taxes. Ontario levies a tax based on the price at which ownership of land is transferred. The tax for Canadian residents is three tenths of 1% on the purchase up to

\$35,000 and six tenths of 1% on anything in excess of that amount; for non-residents the tax is 20% of the purchase price. In addition, Ontario levies a tax of 50% on the increase in value (between April 9, 1974 and the date of sale) on the sale of designated land (all real property except Canadian resource property). In Alberta, a registration fee is charged proportional to the registered value of the land; \$5 for the first \$1,000 and \$1 for each additional \$1,000 up to \$25,000, and 50 cents per \$1,000 in excess of that amount. There is also an Assurance Fund fee charged on transfers of mortgages on the difference between the old registered price and the new registered price at the rate of \$25 per \$1,000 up to \$5,000 and \$1 for each additional \$1,000. British Columbia and Saskatchewan do not have a land transfer tax but have an equivalent in land title fee which is based on land value.

Tax on premium income of insurance companies. As at January 1, 1974, all 10 provinces impose a tax on the premium income of insurance companies. Ontario imposes a tax of 2.5% on the premium income from insurance covering property, fire, inland transport, livestock, plate glass, sprinkler leakage, theft and weather. Premium income from other insurance is taxed at the rate of 2%. British Columbia levies a tax of 2% on gross premiums and 5% on the premiums paid to unlicensed insurers or reciprocal exchanges. All the other provinces tax premium income at the rate of 2%.

Provincial property taxes. Provincial property taxes are levied by New Brunswick at the rate of 1.5% of fair market value on all land and buildings in the province; the same rate of tax is also imposed on business. Prince Edward Island has in operation a program somewhat similar to that of New Brunswick. A tax of 1% is imposed on the fair market value of all real property in the province; a further 1% is assessed against the fair market value of business property. Ontario imposes a property tax of 1.5% of assessed value with a minimum tax of \$6.00 in respect of any land in unorganized (non-municipal) areas. British Columbia also imposes a property tax in unorganized (non-municipal) areas at varying rates ranging from one half of 1% of the assessed value of farm land to 7% for (operating) coal land. The Yukon Territory levies a property tax on the fair value of all real property (non-municipal) at a rate determined each year.

20.6.3 Local taxes

For purposes of financial statistics local governments can be classified into three principal categories — municipalities, local school authorities and special purpose authorities. Consequently, local taxes described below are levied by either one of these entities or by all of them depending upon the taxing powers granted to each of them by their respective provincial legislatures. For more than a century, the main source of revenue of local governments has been related to real properties within their jurisdictions. Various taxes have been gradually implemented to supplement the real property tax from which, however, they still derive the bulk of their revenue.

Local property tax. Municipalities throughout Canada levy taxes on real properties situated within their boundaries. Generally speaking, they set the rates and collect the proceeds of their own levy or, in addition, on behalf of other local governments in their area, particularly local school authorities. However, in most of Quebec, outside the Montreal area, and in the unorganized parts of Ontario, school boards levy and collect their own real property taxes.

The real property tax rate is generally expressed in mills (rate per \$1,000 of the base) or as a rate per \$100 of the base. This base is the assessed value of each property. Methods of determining assessed value vary widely not only among the provinces but also among municipalities within a province. However, for taxation purposes, it is generally referred to as "fair market value" which is considered to be a percentage of "actual market value".

Business taxes. Among other taxes that municipalities levy, business taxes rank next to the real property tax as a producer of municipal revenue. Such taxes are levied directly on the tenant or the operator of a business. The bases on which business taxes are levied are very diversified among the provinces. The most common in use are: a percentage of the assessed value of real property, value of stock-in-trade, the assessed annual rental value of immovables and the area of premises occupied for business purposes.

Water charges. In general, municipalities recoup all, or part, of the cost of supplying water through special charges for water consumption. Such charges take various forms, such as, for example, a water tax based on the rental value of the property occupied, or a charge based on the actual consumption of water.

Sources

- 20.1 - 20.2.1 Public Finance Division, Institutional and Public Finance Statistics Branch, Statistics Canada.
- 20.2.2 Statistics Section, Systems and Planning Branch, Department of National Revenue, Taxation; Business Finance Division, General Statistics Branch, Statistics Canada.
- 20.2.3 - 20.2.4 Public Finance Division, Institutional and Public Finance Statistics Branch, Statistics Canada.
- 20.3 Federal-Provincial Relations Division, Department of Finance.
- 20.4 - 20.5 Public Finance Division, Institutional and Public Finance Statistics Branch, Statistics Canada.
- 20.6.1 Personal, Commodity and Estate Tax Division, Department of Finance.
- 20.6.2 - 20.6.3 Public Finance Division, Institutional and Public Finance Statistics Branch, Statistics Canada.

Tables

..	not available	e	estimate
...	not appropriate or not applicable	p	preliminary
—	nil or zero	r	revised
--	too small to be expressed	certain tables may not add due to rounding	

20.1 Consolidated government revenue and expenditure, after elimination of intergovernment transfers, 1966-70 (million dollars)

Source or function	1966	1967	1968	1969	1970
Gross general revenue by source					
Income tax					
Individuals	4,159.0	5,111.6	6,098.7	7,730.5	9,147.7
Corporations	2,307.2	2,416.6	2,873.4	3,700.7	3,189.4
General sales tax	3,082.7	3,405.2	3,493.8	3,973.6	4,071.6
Real and personal property tax	2,037.9	2,260.1	2,531.4	2,828.9	3,301.0
Other tax revenue	3,454.9	3,804.7	4,275.4	4,851.1	6,970.3
Non-tax revenue	2,848.9	3,441.4	4,088.3	4,737.6	5,457.9
Total	17,890.6	20,439.6	23,361.0	27,822.4	32,137.9
Gross general expenditure by function					
Education	3,484.4	4,207.5	4,811.3	5,554.1	5,993.0
Social welfare	2,642.1	3,246.7	3,679.8	4,015.2	5,398.6
Health	1,924.6	2,298.0	2,615.3	3,386.1	4,224.0
Debt charges (excluding debt retirement)	1,820.1	2,106.5	2,504.4	2,889.6	2,617.7
Transportation and communications	2,260.8	2,210.3	2,340.8	2,461.7	3,246.6
Defence	1,664.0	1,784.0	1,797.0	1,814.7	1,724.5
Natural resources and primary industries	903.1	1,041.7	1,085.6	1,348.4	1,132.7
Veterans pensions and other benefits	392.0	401.0	427.9	424.3	409.0
Contribution to own government enterprises	213.2	253.8	261.9	303.2	307.6
Other expenditure	3,921.3	4,546.6	5,045.2	5,668.6	6,386.7
Total	19,225.6	22,096.1	24,569.2	27,865.9	31,440.4
Gross general revenue less gross general expenditure	-1,335.0	-1,656.5	-1,208.2	-43.5	+697.5

20.2 Gross general revenue of the federal government, years ended Mar. 31, 1972 and 1973 (million dollars)

Source	1972	1973
Taxes		
Income		
Individuals	7,227	8,378
Corporations	2,396	2,919
On certain payments or credits to non-residents	288	292
General sales	2,653	3,052
Alcoholic beverages	398	426
Tobacco	547	565
Other commodities and services	46	44
Customs duties	989	1,182
Estate taxes	132	61
Social insurance levies ¹	571	742
Universal pension plan levies ²	826	879
Other	4	1
Total, taxes	16,077	18,541
Natural resources	8	11
Privileges, licences and permits	21	22
Sales of goods and services	552	699
Return on investments	1,165	1,329
Contributions to non-trusted public service pension plans	185	221
Postal receipts	487	558
Bullion and coinage	24	24
Fines and penalties	12	14
Miscellaneous	11	7
Total, gross general revenue from own sources	18,542	21,426
Specific purpose transfers from other levels of government	8	—
Total, gross general revenue	18,550	21,426

¹Unemployment insurance.

²Canada Pension Plan.

20.3 Gross general expenditure of the federal government, years ended Mar. 31, 1972 and 1973 (million dollars)

Function	1972	1973
General government	1,110	1,388
Protection of persons and property ¹	2,213	2,299
Transportation and communications ²	1,207	1,370
Health	1,603	1,789
Hospital care	847	963
Other	756	826
Social welfare	5,418	6,727
Universal pension plans	144	207
Old age security	2,205	2,524
Veterans benefits	422	477
Unemployment insurance	1,205	2,171
Family and youth allowances	616	610
Assistance to disabled, handicapped, unemployed and other needy persons	630	638
Other	196	100
Education	864	847
Natural resources	277	334
Agriculture, trade and industry, and tourism	897	1,015
Environment	23	100
Recreation and culture	164	215
Labour, employment and immigration	289	489
Housing	70	99
Foreign affairs and international assistance	312	385
Supervision and development of regions and localities	142	140
Research establishments	331	278
General purpose transfers to other levels of government	1,546	1,640
Transfers to own enterprises	272	294
Debt charges	1,423	1,502
Other	57	1
Total, gross general expenditure	18,218	20,912

¹Includes National Defence.²Includes Post Office.

20.4 Transfers by the federal government to provincial governments, territories and local governments, years ended Mar. 31, 1972 and 1973 (thousand dollars)

Year, payee and purpose	Nfld.	PEI	NS	NB	Que.	Ont.	Man.	Sask.	Alta.	BC	All provinces	YT	NWT	Canada
1972														
PROVINCIAL GOVERNMENTS AND TERRITORIES														
General purpose transfers	9,708	659	2,174	1,774	4,484	5,504	2,142	2,116	3,073	2,117	33,751	—	—	33,751
Statutory subsidies	-42	70	4,970	1,235	17,517	25,677	4,944	2,930	8,570	—	65,871	—	—	65,871
Federal estate tax	2,028	361	1,972	9	2,774	10,487	550	21	5,268	853	24,323	225	52	24,600
privately owned public power utilities	120,551	23,153	93,766	97,232	511,581	—	58,649	115,615	—	—	1,020,547	—	—	1,020,547
Equalization	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Established Programs (Interim Arrangements)	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Act	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Grants in lieu of taxes	—	—	—	—	280,749	—	—	—	—	—	280,749	—	—	280,749
Other	—	—	—	—	2,103	—	—	—	—	—	2,631	—	—	2,631
Total, general purpose transfers	132,245	24,243	102,882	102,953	817,105	41,668	66,285	120,682	16,911	3,498	1,428,472	9,731	52,111	1,490,314
Specific purpose transfers	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Protection of persons and property	83	21	133	34	847	1,073	136	120	227	307	2,981	—	19	3,000
Other (civil emergency measures)	11,248	16	10,187	5,194	1,946	4,578	5	209	4	659	34,046	—	—	34,046
Transportation and communications	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Road	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Trans-Canada Highway	129	16	—	114	8	2,330	5	209	4	—	2,338	—	—	2,338
Railway Grade Crossing Fund	11,119	—	10,187	5,080	648	2,248	—	—	—	—	4,674	—	—	4,674
Other	—	—	—	—	—	—	—	—	—	—	27,034	—	—	27,034
Health	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hospital insurance and diagnostic services	27,120	5,232	42,760	34,735	—	427,515	53,492	49,467	94,836	107,110	842,267	768	1,543	844,578
Medical care	15,049	2,897	21,832	16,169	167,028	221,093	28,203	28,370	49,571	62,336	612,548	—	914	613,462
Health Resources Fund	14,350	2,897	1,176	2	7,218	17,361	716	2,953	4,563	2,312	37,000	—	—	37,000
Medical Care Act	280	106	20,656	16,167	159,810	203,732	27,487	25,417	45,008	60,024	575,548	—	914	576,462
Preventive services	217	42	505	252	1,537	2,900	784	594	584	971	8,513	—	25	8,538
General public health	—	—	—	—	—	1,737	266	252	293	383	3,486	—	25	3,511
Tuberculosis control	10	4	17	14	—	—	21	17	28	38	149	—	—	149
Cancer control	—	3	18	—	—	—	—	—	—	—	176	—	—	176
Child and maternal health	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Public health research	53	52	298	17	1,537	1,008	497	325	192	511	4,551	—	—	4,551
Other	60	48	183	154	50	1,484	246	196	313	456	3,190	12	6	3,208
Professional training	57	21	83	69	—	730	103	98	118	156	1,435	—	6	1,441
Mental health	—	22	80	68	—	690	67	96	155	202	1,380	12	—	1,392
Medical rehabilitation and crippled children	3	5	20	17	50	—	76	2	40	98	375	—	—	375
Total, health	42,509	8,283	65,280	51,310	168,615	652,992	82,725	78,627	145,304	170,873	1,466,518	780	2,488	1,469,786
Social welfare														
Assistance to disabled, handicapped, unemployed and other needy individuals	25,845	4,092	22,575	21,471	-76	215,017	37,467	26,079	44,137	70,228	466,835	301	1,047	468,183
Old age assistance	-11	—	-6	-4	-66	-22	-8	-7	-13	-13	-150	—	-1	-151
Disabled persons allowances	59	19	399	975	-9	3,877	1,074	751	1,132	1,394	9,671	2	21	9,694
Blind persons allowances	238	32	325	272	-1	73	97	28	146	284	1,494	3	17	1,514
Canada Assistance Plan	25,559	4,041	21,857	20,228	—	211,089	36,304	25,307	42,872	68,363	455,820	296	1,010	457,126
Other	—	5	28	6	6	3,723	580	60	118	213	4,739	—	19	4,758
Total, social welfare	25,845	4,097	22,603	21,477	-70	218,740	38,047	26,139	44,255	70,441	471,574	301	1,066	472,941

20.4 Transfers by the federal government to provincial governments, territories and local governments, years ended Mar. 31, 1972 and 1973 (thousand dollars) (continued)

Year, payee and purpose	Nfld.	PEI	NS	NB	Que.	Ont.	Man.	Sask.	Alta.	BC	All provinces	YT	NWT	Canada
Education														
Indian and Inuit schools														
Post-secondary	10,482	2,265	20,109	87	187,687	157,188	32,184	23,770	61,404	27,365	535,597	717	—	536,051
Capital assistance in providing training facilities (Adult Occupational Training Act)	4,135	883	4,153	4,902	28,506	157,188	12,735	7,705	12,670	12,670	75,689	—	—	76,143
Post-secondary education	6,347	1,382	15,956	8,241	149,732	157,188	19,449	16,065	61,404	14,695	450,459	—	—	450,459
Canada Student Loans Act	182	129	847	6,712	9,449	21,451	1,134	433	1,049	1,019	9,449	—	—	9,449
Other	10,664	2,394	20,956	19,942	40,362	178,639	33,318	24,203	62,453	29,014	73,318	—	—	73,318
Total, education														
Natural resources														
Fish and game														
Assistance in construction of fishing vessels	1,437	67	122	205	122	24	8	—	—	715	2,700	—	—	2,700
Forests	428	—	—	—	—	—	—	—	—	—	428	—	—	428
Inventory of forest reserves	74	—	—	4,487	—	—	—	—	—	—	4,561	—	—	4,561
Water power	—	—	—	700	—	404	60	—	—	1,210	2,374	—	—	2,374
Total, natural resources	1,939	67	122	5,392	122	428	68	—	—	1,925	10,063	—	—	10,063
Agriculture, trade and industry, and tourism														
Agriculture	755	13,541	1,328	6,111	33,438	6,986	7,438	2,872	1,547	1,866	75,882	—	—	75,882
Agricultural and Rural Development Act	127	—	564	513	2,710	6,147	879	2,256	396	926	14,518	—	—	14,518
Land surveying and mapping	608	268	705	974	29,432	—	—	—	—	—	2,555	—	—	2,555
Rural area development	—	13,228	—	4,618	29,432	—	5,182	—	—	—	52,460	—	—	52,460
Canada Land Inventory	16	—	9	1	389	243	345	220	154	662	2,039	—	—	2,039
4-H Clubs	4	3	9	4	21	68	15	20	16	10	170	—	—	170
Rabies control	—	—	—	1	5	36	—	—	—	—	42	—	—	42
Crop insurance	—	—	—	—	—	492	1,004	363	967	249	4,035	—	—	4,035
Assistance re livestock shipments to the Royal Winter Fair	—	—	—	—	877	—	—	—	—	—	—	—	—	—
Tourism	—	6	9	50	—	59	—	32	14	19	63	—	—	63
Total, agriculture, trade and industry, and tourism	755	13,547	1,337	6,161	33,438	7,045	7,438	2,904	1,584	1,933	76,142	4	9	76,155
Recreation and culture														
Recreational facilities	47	57	78	100	—	—	2,021	—	—	9,838	12,141	95	25	12,261
Culture facilities	—	—	—	—	—	—	2,021	—	—	—	2,021	45	—	2,066
Other	47	57	78	100	—	—	—	—	—	9,838	9,838	—	—	9,838
Labour, employment and immigration	4	4	26	11	206	331	84	47	73	37	282	50	25	357
Labour and employment	—	1	11	4	51	29	4	4	48	1	153	—	—	153
Immigration	—	—	—	—	—	27	—	—	—	—	27	—	—	27
Other	4	3	15	7	155	275	80	43	25	36	643	48	83	774
Housing														
General assistance	684	—	—	—	—	—	—	—	—	—	684	2	—	686
Supervision and development of regions and localities	12,902	58	5,381	9,939	38,353	—	1,185	454	1,732	—	70,004	433	—	70,437
Other specific purpose transfers	452	12	293	532	66	22	8	—	58	1	1,444	—	—	1,444
Total, specific purpose transfers	107,132	28,556	126,396	120,092	471,572	1,063,848	165,027	132,711	255,690	285,028	2,756,052	1,663	4,144	2,761,859
Total, transfers to provincial governments and territories	239,377	52,799	229,278	223,045	1,288,677	1,105,516	231,312	253,393	272,601	288,526	4,184,524	11,394	56,255	4,252,173

20.4 Transfers by the federal government to provincial governments, territories and local governments, years ended Mar. 31, 1972 and 1973 (thousand dollars) (continued)

Year, payee and purpose	Nfld.	PEI	NS	NB	Que.	Ont.	Man.	Sask.	Alta.	BC	All provinces	YT	NWT	Canada
LOCAL GOVERNMENTS														
General purpose transfers	342	187	3,813	—	12,016	26,719	3,281	1,476	3,031	4,810	55,675	71	194	55,940
Grants in lieu of taxes	158	11	88	69	1,288	6,245	419	506	715	584	10,083	18	13	10,114
Specific purpose transfers	158	—	88	58	1,288	5,508	252	246	113	345	2,056	18	13	2,087
Transportation and communications	—	—	—	—	1,000	5,737	167	260	602	239	8,027	—	—	8,027
Air	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Road	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Education	—	—	—	—	332	804	2,788	391	348	—	4,663	—	—	4,663
Primary and secondary	—	—	—	—	270	2,771	385	1,388	1,652	865	15,519	—	—	15,519
Environment	—	55	139	—	364	8,594	385	1,388	384	—	15,384	—	—	15,384
Water purification and supply	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sewage collection and disposal	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Labour, employment and immigration	—	55	139	—	1,787	8,594	385	1,388	1,652	865	15,135	—	—	15,135
Labour and employment	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Housing	2,132	346	1,570	1,580	10,618	4,867	990	882	1,785	2,793	27,563	—	249	27,812
General assistance	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Supervision and development of regions and localities	1,097	—	683	1,121	7,679	11,384	463	—	1,195	765	24,378	—	—	24,378
Specific purpose transfers	—	—	—	—	24	—	—	—	—	—	24	—	—	24
Total, specific purpose transfers	3,387	412	2,480	3,040	22,112	31,894	5,045	3,167	5,695	4,998	82,230	18	262	82,510
Total, transfers to local governments	3,729	599	6,293	3,040	34,128	58,613	8,326	4,643	8,726	9,808	137,905	89	456	138,450
Total, transfers to provincial governments, territories and local governments	243,106	53,398	235,571	226,085	1,322,805	1,164,129	239,638	258,036	281,327	298,334	4,322,429	11,483	56,711	4,390,623
1973														
PROVINCIAL GOVERNMENTS AND TERRITORIES														
General purpose transfers	9,708	659	2,174	1,774	4,484	5,504	2,142	2,116	3,073	2,117	33,751	—	—	33,751
Statutory subsidies	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Federal estate tax	-417	224	391	-23	831	7,870	1,536	1,105	913	—	12,430	—	—	12,430
Federal corporation income tax on privately owned public utilities	3,321	1,489	3,666	—	12,081	36,029	1,111	120	18,894	3,334	80,045	729	157	80,931
Equalization	114,447	146,763	25,092	125,238	462,434	—	89,816	173,582	—	—	1,137,372	—	—	1,137,372
Established Programs (Interim Arrangements)	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Act	—	—	—	—	236,891	—	—	—	—	—	236,891	—	—	236,891
Grants in lieu of taxes	—	—	—	2,450	—	—	—	—	—	729	3,179	—	—	3,179
Other	—	—	—	400	—	—	—	—	—	—	400	13,229	61,372	75,001
Total, general purpose transfers	127,059	149,135	31,323	129,839	716,721	49,403	94,605	176,923	22,880	6,180	1,504,068	13,958	61,529	1,579,555
Specific purpose transfers	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General government	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Protection of persons and property	83	20	138	42	831	1,072	139	131	226	300	2,982	622	1,727	2,349
Courts of law	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other (civil emergency measures)	83	20	138	42	831	1,072	139	131	226	300	2,982	11	29	3,022
Transportation and communications	5,159	72	9,231	10,014	10,135	4,886	181	133	117	146	40,074	—	—	40,074
Road	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Railway Grade Crossing Fund	636	72	1	172	2,918	1,819	181	133	117	146	6,195	—	—	6,195
Other	4,523	—	9,230	9,796	4,217	67	—	—	—	—	27,833	—	—	27,833
Water	—	—	—	—	3,000	3,000	—	—	—	—	6,000	—	—	6,000
Other	—	—	—	46	—	—	—	—	—	—	46	—	—	46
Health	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hospital care	30,594	6,238	47,154	39,293	—	485,046	64,445	55,194	105,803	123,311	957,078	1,006	3,925	962,009
Hospital insurance and diagnostic services	30,594	6,238	47,154	39,293	—	485,046	64,445	55,194	105,803	123,311	957,078	932	2,510	960,520

20.4 Transfers by the federal government to provincial governments, territories and local governments, years ended Mar. 31, 1972 and 1973 (thousand dollars) (continued)

Year, payee and purpose	Nfld.	PEI	NS	NB	Que.	Ont.	Man.	Sask.	Alta.	BC	All provinces	YT	NWT	Canada
Health (concluded)														
Hospital care	21,162	3,266	23,326	19,131	175,948	240,321	35,107	29,445	53,120	65,317	666,143	74	1,415	1,489
Medical Resources Fund	5,980	60	771	1,682	7,727	15,346	4,926	2,818	5,116	607	36,893	606	1,366	668,115
Medical Care Act	15,282	3,206	22,555	18,489	175,221	224,975	30,181	26,627	48,004	64,710	629,250	486	1,067	37,000
Medicare	—	—	—	—	—	—	—	—	—	—	—	120	192	630,803
Medicare Indians and Inuit	—	—	—	—	—	—	—	—	—	—	—	—	—	312
Preventive services	45	—	—	386	95	1,489	1,224	553	289	492	4,780	—	19	4,799
Public health research	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other	59	21	85	71	588	805	103	99	165	160	2,156	—	—	2,156
Professional training	51,860	9,525	70,951	58,590	178,025	727,396	100,208	85,027	159,295	189,280	1,630,157	1,612	5,310	1,637,079
Total, health														
Social welfare	26,302	4,452	22,896	24,241	520	214,956	37,058	29,937	54,660	71,752	486,774	695	942	488,411
Assistance to disabled, handicapped, unemployed and other needy individuals	-11	—	-3	-2	15	-19	-4	—	-3	-6	-1	—	-1	-35
Old age assistance	79	22	409	1,049	—	4,341	775	812	1,438	1,496	10,421	2	16	10,439
Disabled persons allowances	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Blind persons allowances	26,016	32	295	250	505	210,597	36,204	29,103	53,098	69,979	475,039	690	908	476,637
Canada Assistance Plan	874	1	4	13	—	3,752	178	64	147	9	5,042	—	—	5,042
Other	27,176	4,453	22,900	24,254	520	218,708	37,236	30,001	54,807	71,761	491,816	695	942	493,453
Total, social welfare														
Education	6,219	1,365	17,054	8,047	188,888	161,739	19,987	14,221	53,760	19,288	490,568	—	—	1,026
Indian and Inuit schools	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Post-secondary	6,219	1,365	17,054	8,047	188,888	161,744	19,976	14,221	53,745	19,288	481,098	—	—	21
Capital assistance in providing training facilities (Adult Occupational Training Act)	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Post-secondary education	224	228	954	5,881	36,910	18,951	1,195	773	1,058	845	9,449	—	—	481,098
Canada Student Loans Act	6,443	1,593	18,008	13,928	225,798	180,690	21,182	14,994	54,818	21,159	558,613	—	—	67,019
Other	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total, education														
Natural resources	2,110	118	261	467	202	61	30	—	—	951	4,200	—	—	4,200
Fish and game	331	—	—	—	—	—	—	—	—	—	331	—	—	331
Assistance in construction of fishing vessels	612	—	—	—	—	—	—	—	—	—	5,087	—	—	5,087
Forests	—	—	—	—	—	—	—	—	—	—	4,879	—	—	4,879
Inventory of forest reserves	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mines	—	—	—	4,475	—	—	—	—	—	—	—	—	—	—
Water power	—	—	—	—	—	1,039	—	—	—	3,840	—	—	—	—
Total, natural resources	3,053	118	261	4,942	202	1,100	30	—	—	4,791	14,497	—	—	14,497
Agriculture, trade and industry, and tourism	710	15,425	2,868	5,816	37,598	7,790	7,415	2,055	8,515	1,679	89,871	—	—	89,871
Agriculture	320	—	2,290	321	5,758	6,825	2,060	530	908	782	19,794	—	—	19,794
Agricultural and Rural Development Act	268	2	496	803	—	—	—	—	—	—	—	—	—	—
Land surveying and mapping	—	15,355	—	4,431	30,000	—	4,024	—	—	—	53,810	—	—	1,569
Rural area development	75	—	—	—	737	5	237	224	133	631	2,042	—	—	53,810
Canada Land Inventory	4	3	9	3	24	68	15	21	19	9	175	—	—	2,042
4-H Clubs	—	—	—	—	9	47	—	2	—	—	59	—	—	175
Rabies control	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Crop insurance	—	—	—	—	—	784	1,026	1,004	956	257	5,214	—	—	59
Assistance re livestock shipments to the Royal Winter Fair	—	—	—	—	—	61	—	—	—	—	61	—	—	5,214

20.4 Transfers by the federal government to provincial governments, territories and local governments, years ended Mar. 31, 1972 and 1973 (thousand dollars) (concluded)

Year, payee and purpose	Nfld.	PEI	NS	NB	Que.	Ont.	Man.	Sask.	Alta.	BC	All provinces	YT	NWT	Canada
Agriculture (concluded)														
Research	43	—	—	21	258	—	—	—	—	43	—	365	—	365
Irrigation rehabilitation	—	—	—	—	—	—	—	—	—	6,200	—	6,200	—	6,200
Waterfowl crop depredation	—	—	—	—	—	—	—	53	274	255	—	582	—	582
Trade and industry	—	—	8	9	40	10	—	32	31	—	—	130	—	130
Tourism	40	29	36	—	—	147	173	19	26	12	10	492	—	492
Total, agriculture, trade and industry, and tourism	750	15,462	2,913	5,856	37,755	7,963	7,466	2,112	8,527	1,689	90,493	—	—	90,493
Environment														
Water purification and supply	—	1,498	—	—	84	—	—	—	—	—	—	—	2	2
Recreation and culture	69	—	—	93	—	—	—	—	—	—	2,108	50	65	2,223
Recreational facilities	—	—	—	—	—	—	—	—	—	—	—	—	—	364
Other	69	1,498	93	84	—	—	—	—	—	—	—	—	—	1,859
Labour, employment and immigration	—	239	1,127	973	64	274	1,571	2,524	1,474	2,012	10,258	56	2	10,316
Labour and employment	—	236	1,117	966	22	217	1,562	2,511	1,457	1,993	10,081	55	—	10,136
Immigration	—	—	—	—	—	—	24	—	—	—	24	—	—	24
Other	—	3	10	7	—	42	33	9	13	17	19	153	1	156
Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General assistance	298	—	—	—	—	—	—	—	—	—	298	—	—	298
Supervision and development of regions and localities	17,587	87	11,032	6,235	29,285	—	1,373	808	986	—	67,393	—	—	67,393
Total, specific purpose transfers	112,478	33,067	136,654	124,918	482,615	1,142,089	169,750	135,730	280,250	291,138	2,908,689	3,046	8,077	2,919,812
Total, transfers to provincial governments and territories	239,537	182,202	167,977	254,757	1,199,336	1,191,492	264,355	312,653	303,130	297,318	4,412,757	17,004	69,606	4,499,367
LOCAL GOVERNMENTS														
General purpose transfers	304	102	4,107	—	10,854	31,586	3,522	1,655	2,986	5,048	60,164	82	274	60,520
Grants in lieu of taxes	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Specific purpose transfers	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General government	398	—	—	—	1,363	5,248	570	414	807	274	9,191	77	—	77
Administrative	398	—	67	40	1,010	1,249	570	168	534	213	4,249	10	—	9,191
Transportation and communications	—	—	—	—	353	3,999	—	246	273	61	4,932	—	—	4,259
Air	—	—	—	—	—	—	—	—	—	—	—	—	—	4,932
Road	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Social welfare	—	—	—	—	—	41	5	—	—	—	46	—	—	46
Assistance to disabled, handicapped, unemployed and other needy individuals	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Education	—	—	—	—	259	797	1,484	584	652	—	3,776	—	—	3,776
Primary and secondary	—	228	238	1,033	4,319	14,609	221	550	2,961	2,978	27,192	—	15	27,207
Environment	55	—	—	—	157	—	—	—	—	—	157	—	—	157
Water purification and supply	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sewage collection and disposal	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Labour, employment and immigration	55	228	238	1,033	4,162	14,609	221	550	2,961	2,978	27,035	—	15	27,050
Labour and employment	2,782	325	1,369	1,497	9,672	3,173	819	672	1,247	3,085	24,641	207	27	24,875
Housing	1,310	—	178	340	11,930	5,198	1,864	9	1,558	1,010	23,397	—	—	23,397
General assistance	4,545	553	1,852	2,910	27,584	29,030	4,958	2,229	7,225	7,347	88,233	294	42	88,569
Total, specific purpose transfers	4,849	655	5,959	2,910	38,438	60,616	8,480	3,884	10,211	12,395	148,397	376	316	149,089
Total, transfers to provincial governments, territories and local governments	224,386	182,857	173,936	257,667	1,237,774	1,252,108	272,835	316,537	313,341	309,713	4,561,154	17,380	69,922	4,648,456

20.5 Assets and liabilities of the federal government, as at Mar. 31, 1972 and 1973 (million dollars)

Item	1972	1973	Item	1972	1973
Assets			Liabilities		
Cash on hand or on deposit	1,903	2,428	Payables	7,095	8,375
Receivables	334	373	Loans and advances	370	370
Loans and advances	20,101	21,623	Treasury bills	3,830	4,290
Investments	11,693	13,491	Canada Savings Bonds	9,712	10,989
Other assets	818	997	Other bonds	13,716	13,759
Total, assets	34,849	38,912	Other liabilities	4,928	5,369
			Total, liabilities	39,651	43,152

20.6 Gross bonded debt of the federal government, average interest rate, term of issue and place of payment as at Mar. 31, 1972 and 1973

Item	1972	1973
Bonded debt	\$'000 23,428,500	24,748,493
Average interest rate	% 6.21	6.39
Average term of issue	yr 11.49	11.39
Place of payment		
Canada	\$'000 23,093,112	24,414,834
New York	" 261,544	259,815
Federal Republic of Germany	" 73,844	73,844

20.7 Guaranteed debt of the Government of Canada, years ended Mar. 31, 1972 and 1973 (thousand dollars)

Item	1972		1973	
	Amount of guarantee	Amount outstanding as at Mar. 31, 1972	Amount of guarantee	Amount outstanding as at Mar. 31, 1973
Railway securities guaranteed as to principal and interest				
Canadian National 3¼% due Feb. 1, 1974	200,000	200,000	200,000	200,000
Canadian National 2¼% due June 15, 1975, US\$6,000,000 ¹	6,000	6,000	6,000	6,000
Canadian National 5% due May 15, 1977	77,077	77,077	75,706	75,706
Canadian National 4% due Feb. 1, 1981	300,000	300,000	300,000	300,000
Canadian National 5¼% due Jan. 1, 1985	89,980	89,980	87,977	87,977
Canadian National 5% due Oct. 1, 1987	143,255	143,255	139,849	139,849
Grand Trunk Western Railroad Company	5,400	5,400	5,400	5,400
Total, railway securities	821,712	821,712	814,932	814,932
Other outstanding guarantees and contingent liabilities				
Loans made by lenders under Part IV of the National Housing Act, 1954 for home extension and improvements	30,000 ²	22,839 ²	30,000 ²	23,458 ²
Insured loans made by approved lenders under the National Housing Act 1954	16,000,000 ^{2,4}	9,225,000 ^{2,4}	16,000,000 ^{2,5}	10,056,000 ^{2,5}
Liability for insurance and guarantees under the Export Development Act	1,150,000	615,191	1,150,000	655,605
Loans made by chartered banks under the Farm Improvement Loans Act	204,114	83,034	1,068,570	272,061
Loans made by chartered banks and credit unions under the Fisheries Improvement Loans Act	3,700	2,583	11,442	2,359
Loans made by chartered banks under the Small Businesses Loans Act	34,588	17,863	58,101	20,664
Loans made by chartered banks and credit unions under the Canada Student Loans Act ⁶	535,637	485,237	398,000	398,000
Loans made by chartered banks to the Canadian Wheat Board	725,000	327,048	800,000	436,454
Loans made by lenders under the Regional Development Incentives Act and the Regional Economic Expansion Act	1,652	1,652	1,025	1,025
Loans made by lenders under the Cape Breton Development Act	100,000	30,000	30,000	28,500
Loans made by lenders under the General Adjustment Assistance Program	250,000	17,199	250,000	24,905
Total, guaranteed debt	19,856,403	11,649,358	20,612,070	12,733,963
Loans made by approved lending institutions under National Housing Act prior to 1954	Unstated	Indeterminate	Unstated	Indeterminate
Guarantees to owners of returns from moderate rental housing projects	Unstated ⁷	Indeterminate ⁷	Unstated ⁸	Indeterminate ⁸

¹Liability is subject to exchange rate in effect June 15, 1975.²As at Dec. 31, 1971.³As at Dec. 31, 1972.⁴As reported (in accordance with Section 45, National Housing Regulations) by approved lenders as at Dec. 31, 1971.⁵As reported (in accordance with Section 45, National Housing Regulations) by approved lenders as at Dec. 31, 1972.⁶Includes contingent liability in respect of alternative payments to non-participating province.⁷As at Dec. 31, 1971, funds totalling \$6,504,237 were held by the Central Mortgage and Housing Corporation for the purpose of settling claims. In 1971, rental contracts totalled \$4,288,000.⁸As at Dec. 31, 1972, funds totalling \$7,003,991 were held by the Central Mortgage and Housing Corporation for the purpose of settling claims. In 1972, rental contracts totalled \$3,301,000.

20.8 Summary of the public debt and interest payments thereon, years ended Mar. 31, 1969-73

Year ended Mar. 31	Gross debt \$'000,000	Net active assets \$'000,000	Net debt \$'000,000	Net debt per capita ¹ \$	Increase or decrease in net debt during year \$'000,000	Interest paid on debt \$'000,000	Interest paid per capita ¹ \$
1969	35,919	18,583	17,336	823.13	+576	1,443	69.54
1970	38,150	21,207	16,943	792.59	-393	1,676	79.57
1971	42,976	25,653	17,322	798.97	+379	1,780	83.25
1972	47,687 [†]	29,750 [†]	17,937	831.63	+615	1,964	89.95
1973	51,718	34,262	17,456	790.04	-481	2,105	96.43

¹Based on the official estimates of population for June 1 of the year indicated.[†]Based on the official estimates of population for June 1 of the year immediately preceding the one indicated.**20.9 Revenue collected (net of refunds) by the Department of National Revenue, Taxation, years ended Mar. 31, 1969-73 (thousand dollars)**

Year ended Mar. 31	Income tax ¹			Total	Estate tax and succession duties ²	Total collections
	Individual ³	Corporation	Special refundable tax			
1969	6,323,872	2,416,851	-94,462	8,646,261	112,377	8,758,638
1970	7,910,444	3,080,001	-102,658	10,887,787	100,631	10,988,418
1971	9,097,603	2,653,286	-35,083	11,715,806	119,835	11,835,641
1972	10,372,651	2,664,602	-1,699	13,035,554	132,016	13,167,570
1973	12,421,913	3,287,807	-840	15,708,880	71,594	15,780,474

¹Includes old age security tax and provincial income tax collected by the Department of National Revenue, Taxation.²Includes non-resident withholding tax and Canada Pension Plan contributions by employers, employees and self-employed persons; from 1969 includes social development tax; 1972 includes unemployment insurance premiums.³Includes federal estate taxes as well as succession duties and gift taxes collected on behalf of certain provinces.**20.10 Number of taxpayers and amounts of income and tax, by selected cities, 1970 and 1971**

City and province	1970			1971		
	Taxpayers	Total income assessed \$'000,000	Federal tax payable ¹ \$'000,000	Taxpayers	Total income assessed \$'000,000	Federal tax payable ¹ \$'000,000
Brantford, Ont.	30,837	190.1	24.3	29,241	206.0	27.1
Calgary, Alta.	168,582	1,151.4	156.3	166,057	1,265.9	174.1
Dartmouth, NS	23,466	141.7	17.3	22,313	158.2	19.9
Edmonton, Alta.	195,196	1,297.9	173.0	188,406	1,411.2	193.1
Guelph, Ont.	26,167	172.5	22.8	26,189	191.3	25.6
Halifax, NS	55,738	355.2	46.2	51,354	369.7	49.2
Hamilton, Ont.	197,499	1,390.4	189.1	190,210	1,487.8	207.2
Hull, Que.	44,038	277.8	27.2	44,022	316.2	31.8
Kingston, Ont.	35,166	232.4	31.4	33,465	252.6	35.0
Kitchener—Waterloo, Ont.	83,818	542.4	71.6	80,727	592.3	80.4
London, Ont.	102,600	690.1	93.1	99,141	760.2	105.7
Moncton, NB	24,268	138.7	15.8	23,447	155.7	18.6
Montreal, Que.	842,366	5,665.0	584.9	806,025	5,963.6	623.1
New Westminster, BC	33,636	230.5	30.7	19,484	150.5	21.1
Niagara Falls, Ont.	27,981	177.2	21.5	24,253	176.9	22.9
Oakville, Ont.	24,950	201.3	29.5	25,038	226.9	34.3
Oshawa, Ont.	38,807	260.0	34.3	36,067	294.4	41.0
Ottawa, Ont.	185,478	1,381.8	199.9	182,971	1,529.9	221.6
Peterborough, Ont.	27,394	183.2	23.9	26,507	195.8	25.9
Quebec, Que.	143,879	935.2	92.9	140,554	1,018.9	104.2
Regina, Sask.	56,005	345.1	42.8	53,315	368.7	46.7
Saint John, NB	32,246	186.5	21.9	30,899	204.7	25.0
St. Catharines, Ont.	49,506	338.8	44.0	47,746	374.9	51.2
St. John's, Nfld.	35,364	213.5	26.6	37,823	257.3	32.4
Sarnia, Ont.	31,094	239.3	33.2	27,921	241.4	33.7
Saskatoon, Sask.	48,377	298.1	36.6	46,269	318.8	39.7
Sault Ste Marie, Ont.	30,167	216.7	28.6	29,059	232.2	31.4
Sherbrooke, Que.	33,450	198.8	18.7	31,652	214.5	21.0
Sudbury—Copper Cliff, Ont.	56,503	425.5	59.3	54,729	449.2	63.5
Sydney—Glace Bay, NS	33,521	185.9	19.8	30,883	196.9	22.5
Thunder Bay, Ont.	45,398	293.7	37.6	44,461	333.5	44.8
Toronto, Ont.	1,025,014	7,300.3	1,059.4	993,366	7,816.0	1,145.0
Trois-Rivières, Que.	22,798	146.1	13.9	19,705	144.9	14.6
Vancouver, BC	375,539	2,602.4	359.7	413,007	3,191.4	443.3
Victoria, BC	86,483	541.9	68.7	81,882	580.0	75.2
Windsor, Ont.	91,426	675.7	89.6	85,401	695.2	92.1
Winnipeg, Man.	231,859	1,434.6	182.9	219,176	1,518.9	197.6

¹Includes old age security and social development taxes.

20.11 Number of taxpayers and amounts of income and tax, by occupational class, 1970 and 1971

Occupational class	1970			1971		
	Taxpayers	Total income assessed \$'000	Federal tax payable ¹ \$'000	Taxpayers	Total income assessed \$'000	Federal tax payable ¹ \$'000
Employees	6,487,048	41,864,630	5,047,669	6,324,138	45,457,159	5,588,324
Farmers	116,084	610,173	55,819	115,384	691,006	66,613
Fishermen	11,635	62,614	6,353	10,148	58,678	5,971
Self-employed professionals						
Accountants	4,853	93,676	18,222	5,332	99,340	19,031
Medical doctors and surgeons	19,347	672,453	165,829	20,742	820,442	201,377
Dentists	5,665	129,126	27,003	5,331	137,689	29,781
Lawyers and notaries	9,304	248,771	57,208	9,707	270,452	64,005
Consulting engineers and architects	2,483	55,582	11,321	2,696	58,363	11,631
Entertainers and artists	7,271	46,871	6,029	6,214	42,025	5,206
Other professionals	13,654	124,708	19,914	14,423	156,289	25,717
Salesmen	21,051	158,054	19,303	19,734	172,982	21,966
Business proprietors	275,193	1,824,060	213,324	254,308	1,892,515	229,524
Investors	270,844	1,791,758	235,338	256,662	1,862,997	241,944
Property owners	66,523	430,165	57,273	58,073	439,396	62,792
Pensioners	316,921	1,094,897	89,990	256,408	1,124,461	106,422
All others	13,855	58,620	6,322	13,271	72,393	8,448
Total	7,641,731	49,266,158	6,036,921	7,372,571	53,356,187	6,688,751

¹Includes old age security and social development taxes.**20.12 Individual income tax statistics, by income class, 1970 and 1971**

Income class based on total income	Taxpayers		Total income assessed		Federal tax payable		Average federal tax ¹	
	1970	1971	1970 \$'000	1971 \$'000	1970 \$'000	1971 \$'000	1970 \$	1971 \$
Under \$2,000	758,066	280,151	1,153,214	487,717	34,488	14,642	45	52
\$2,000 and under \$3,000	868,765	767,941	2,175,599	1,926,234	118,351	100,528	136	131
\$3,000 " \$5,000	1,823,209	1,745,633	7,262,131	6,980,969	604,728	580,415	332	332
\$5,000 " \$7,000	1,571,583	1,525,815	9,376,301	9,099,441	987,495	956,286	628	627
\$7,000 " \$10,000	1,555,462	1,694,277	12,896,330	14,157,632	1,579,547	1,723,678	1,015	1,017
\$10,000 " \$15,000	756,246	975,065	8,929,147	11,551,272	1,226,512	1,552,834	1,622	1,593
\$15,000 " \$25,000	227,985	289,207	4,168,640	5,265,925	688,475	849,701	3,020	2,938
\$25,000 " \$50,000	64,998	75,937	2,146,026	2,511,479	465,419	528,852	7,161	6,964
\$50,000 and over	15,417	18,545	1,158,769	1,375,517	331,906	381,815	21,529	20,589
Total	7,641,731	7,372,571	49,266,158	53,356,187	6,036,921	6,688,751	790	907

¹Includes old age security and social development taxes.**20.13 Corporations reporting positive taxable income¹, by industrial division and by asset size, 1969-71 (million dollars)**

Asset size and year		Agriculture, forestry, fishing	Mining	Manufacturing	Construction	Utilities	Wholesale trade	Retail trade	Finance ²	Services	Total ²
Under \$100,000	1969	7.5	2.9	29.9	43.8	14.3	44.1	73.0	68.0	66.9	350.4
	1970	7.8	3.1	26.0	41.5	14.9	41.1	72.7	67.1	68.8	343.0
	1971	7.4	3.9	30.0	45.7	17.0	45.1	74.3	74.9	79.4	377.7
\$100,000-\$249,999	1969	11.8	3.3	59.6	56.6	18.8	72.6	83.5	85.8	61.4	453.3
	1970	11.9	3.0	58.3	53.1	19.7	73.3	84.3	85.4	64.4	453.3
	1971	11.9	2.8	58.7	61.0	21.2	74.6	92.7	95.0	75.5	493.3
\$250,000-\$999,999	1969	17.6	8.2	192.9	68.0	33.4	162.3	70.1	123.9	75.1	751.5
	1970	17.4	7.0	175.7	68.9	31.2	167.9	73.9	125.3	82.3	749.8
	1971	18.4	6.9	188.2	75.8	34.9	181.6	87.4	148.0	88.6	829.9
\$1,000,000-\$4,999,999	1969	4.6	14.7	466.0	56.8	66.2	178.2	50.5	98.7	50.5	986.2
	1970	5.0	14.5	430.6	53.4	69.8	181.4	45.6	93.4	53.5	947.2
	1971	5.2	16.6	470.1	83.6	74.7	232.2	65.3	116.1	68.3	1,132.1
\$5,000,000 and over	1969	10.5	221.9	2,060.3	70.8	436.9	174.9	222.6	836.7	68.2	4,102.7
	1970	6.4	314.4	1,686.8	48.1	481.3	182.0	234.9	858.3	64.6	3,876.8
	1971	6.2	191.0	2,056.7	80.3	434.2	265.5	233.0	985.0	75.4	4,327.4
Total, taxable income	1969	51.9	251.0	2,808.7	296.0	569.6	632.1	499.7	1,213.0	322.1	6,644.0
	1970	48.6	342.0	2,377.5	265.1	616.9	645.7	511.4	1,229.4	333.6	6,370.1
	1971	49.2	221.1	2,803.7	346.5	581.9	799.0	552.7	1,419.0	387.2	7,160.4

¹Net of prior year losses.²Excludes insurance carriers.

20.14 Federal and provincial income taxes payable by corporations¹, by industrial division, 1969-71 (million dollars)

Income taxes and year		Agriculture, forestry, fishing	Mining	Manufacturing	Construction	Utilities	Wholesale trade	Retail trade	Finance ²	Services	Total ³
Federal taxes payable	1969	10.9	99.7	1,071.7	74.5	214.4	191.5	143.2	399.9	84.2	2,289.9
	1970	9.4	139.3	911.9	62.8	237.9	199.0	147.6	401.0	83.5	2,192.4
	1971	8.7	83.0	1,038.6	86.1	211.7	251.2	157.7	455.1	94.3	2,386.6
Provincial taxes payable	1969	5.1	26.5	313.1	31.9	62.0	69.5	54.8	126.2	34.5	723.8
	1970	4.5	37.9	272.5	29.0	70.1	72.0	55.7	128.5	38.5	708.7
	1971	4.9	24.0	324.2	40.1	67.6	92.1	63.5	153.1	43.6	813.3
Total	1969	16.1	126.2	1,384.8	106.4	276.5	261.0	198.0	526.1	118.7	3,013.7
	1970	13.9	177.2	1,184.4	91.9	308.0	271.1	203.2	529.5	122.0	2,901.1
	1971	13.6	107.1	1,362.8	126.2	279.4	343.3	221.2	608.2	138.0	3,199.8

¹As declared on income tax returns before assessment.

²Excludes insurance carriers.

20.15 Excise taxes collected, by commodity, years ended Mar. 31, 1972 and 1973 (thousand dollars)

Commodity	1972	1973
Sales tax ¹	1,984,707	2,288,727
Other excise taxes		
Cigarettes, tobacco and cigars	330,121	343,082
Jewellery, watches, ornaments, etc.	11,142	15,015
Matches and lighters	1,231	1,259
Television sets, radios, tubes and phonographs	10,190	78
Toilet preparations	22,037	25,673
Wines	9,373	10,006
Sundry commodities	1,875	2,217
Interest and penalties	3,439	3,433
Less refunds and drawbacks	-997	-315
Total	2,373,118	2,689,175

¹Net after deduction of refunds and drawbacks; excludes tax credited to the old age security fund.

20.16 Conditional grants and shared-cost programs as at December 1973

Department and project	Year established	Basis of provincial apportionment of federal funds	Provinces participating ¹	Provincial share ² %	Maximum limitation on grant ³	Federal contribution 1972-73 ⁴ \$'000
AGRICULTURE						
Freight assistance on livestock shipments to Royal Winter Fair	1946	Extent of provincial programs	9 (Ont.)	25	O	61
4-H Club activities	1900	Extent of provincial programs	10	50	O	175
Crop insurance	1961	Extent of provincial programs	8 (Nfld., NB)	0-50 of admin. costs	O	5,214
Compensation — rabies control	1959	Incidence of disease	7 (NB, Que., Ont.)	60	O	59
Barberry eradication	1964	Extent of provincial programs	Que., Ont.	50	O	—
Grants to special fairs	1957	Flat grant	Nfld., NB	5	F	—
CENTRAL MORTGAGE AND HOUSING CORPORATION						
Urban renewal	1944	Project cost	10	50 ^s	O	46,521
Public housing	1949	Project losses	10	25 or 50 ^s	O	—
Sewage treatment projects	1960	Work completed	10	75 ^s	O	23,397
EMERGENCY MEASURES						
Population	1952	Population	10	25-50 ^s	F	2,982
ENVIRONMENT						
Water planning and management	1938	Estimated construction costs	NB, Ont., Man., Sask., Alta., BC	37½-62½	F	4,268
Flood control	ad hoc	Extent of provincial programs	BC	100-10	O	2,500
Canada Land Inventory	1964	Extent of provincial programs	10	—	O	2,442
Relocation — fishing families	1967	Extent of provincial programs	Nfld.	—	O	290
FINANCE						
Canada student loans — service fees	1965	Grant per eligibility certificate	9 (Que.)	7	O	500
— interest	1963	Que. ratio (age group 18-25)	Que.	—	O	9,449
INDIAN AFFAIRS AND NORTHERN DEVELOPMENT						
Welfare services to Indians	1960	Specified in each agreement	Nfld., Ont., Man., Sask., Alta.	0-50	varies	321
MANPOWER AND IMMIGRATION						
Agricultural manpower	1941	Specified in agreement	9 (Nfld.)	50	F	250
Vocational rehabilitation of disabled persons	1953	Extent of provincial programs	9 (Que.)	50	O	7,450
Occupational training	1971	Extent of federal program	10	—	O	146,167
NATIONAL HEALTH AND WELFARE						
Health personnel training	1948	Flat grant and population	10	7	F	2,156
Public health resources	1948	Based on research needs	10	7	F	4,780
Health Resources Fund	1966	\$300 million on basis of population				
Hospital insurance						
	1958	\$175 million by federal government	10	50	F	36,893
		\$25 million on agreement of Atlantic Provinces				
		Population eligible for hospitalization x (25% of average national per capita costs + 25% of average provincial per capita costs)				
	1968	Average number insured x 50% of average per capita costs of participating provinces	10	—	O	1,355,451
Medicare						
Old age assistance	1952	Needy population (age group 65-66)	10	—	O	629,250
Blind persons allowances	1937	Needy population (age group 18-65)	10	50	O	191
Disabled persons allowances	1954	Needy disabled population (age group 18-65)	10	25	O	1,654
Unemployment assistance	1955	Needy unemployed	10	50	O	2,182
Canada Assistance Plan	1966	Individuals in need	Que., Ont., Alta.	50	O	421
Fitness and amateur sport	1962	Flat grant and population	10	50	O	778,540
			9 (Que.)	40	F	281

20.17 Gross general revenue and expenditure of provincial and territorial governments, years ended Mar. 31, 1971 and 1972 (thousand dollars) (concluded)

Year, source or function	Province or territory												
	Nfld.	PEI	NS	NB	Que.	Ont.	Man.	Sask.	Alta.	BC	YT	NWT	Canada
1971 (concluded)													
Gross general expenditure by function													
General government	15,662	5,816	24,048	27,389	189,923	244,975	24,518	21,296	54,424	60,781	2,642	26,202	697,676
Protection of persons and property	9,592	1,599	12,665	9,444	141,538	210,960	17,879	17,993	48,917	38,540	1,071	3,199	513,787
Transportation and communications	52,282	13,329	27,373	72,533	426,659	509,981	51,275	82,661	93,788	135,147	2,098	2,098	1,511,239
Health	7,655	14,285	19,749	87,424	1,046,271	1,370,111	185,269	153,883	329,038	383,098	2,029	4,693	3,978,702
Social welfare	49,365	9,002	40,117	38,424	648,754	1,429,693	66,234	51,897	112,358	172,779	1,513	3,289	1,623,925
Education	98,855	20,793	130,591	152,635	1,105,795	1,529,413	167,743	137,234	385,545	299,236	6,103	17,255	4,051,506
Natural resources	6,579	937	7,907	22,697	124,350	171,103	22,556	9,986	32,643	62,220	126	806	291,914
Agriculture, trade and industry, and tourism	21,179	5,254	15,151	9,891	120,159	87,086	18,390	17,674	31,514	18,679	350	3,162	348,688
Housing	5,334	1,870	1,176	1,716	167,902	332	11,527	14,476	66,110	66,110	340	3,522	300,882
Debt charges	37,742	7,646	58,444	29,300	201,753	295,809	47,462	42,189	68,441	25,400	1,313	1,313	814,837
General purpose transfers to other levels of government	2,921	560	3,083	—	156,511	63,874	10,522	—	40,761	47,683	256	—	382,172
All other expenditures	19,470	4,219	17,951	33,755	109,118	129,437	20,539	10,909	20,921	14,291	1,965	6,695	399,271
Total	394,036	85,111	504,363	484,838	4,229,131	5,307,941	632,918	557,246	1,232,826	1,323,964	23,989	72,235	14,848,598
1972													
Gross general revenue by source													
Income tax													
Individuals	28,041	4,476	56,722	50,881	1,174,213	1,022,058	119,355	52,620	192,031	266,701	—	—	2,967,097
Corporations	8,951	1,547	14,242	11,139	183,747	372,287	34,165	10,949	68,090	80,708	—	—	785,824
General sales tax	51,322	10,414	74,041	59,676	643,217	768,831	74,765	77,723	—	249,059	—	—	2,009,048
Motive fuel tax	22,681	6,182	42,478	34,673	439,119	439,119	48,176	53,203	85,411	109,862	2,472	2,270	1,167,748
Health insurance premiums	—	—	—	—	—	586,971	29,222	16,400	54,232	77,172	—	—	763,996
Social insurance levies	5,363	681	7,443	8,278	78,326	140,784	11,830	5,973	25,127	55,782	—	—	339,588
Other provincial taxes	2,620	2,511	4,734	39,323	672,461	261,987	21,607	10,423	25,122	77,042	1,276	1,388	1,125,634
Natural resource revenue	3,466	632	1,987	6,195	82,352	55,354	8,958	41,104	287,612	150,687	98	99	640,543
Privileges, licences and permits	15,971	15,941	12,502	12,502	161,118	226,493	20,749	16,773	35,833	48,415	807	922	555,499
Liquor profits	7,668	3,648	18,358	137,082	167,444	27,090	19,203	61,413	84,705	84,705	1,387	2,176	556,435
Non-farm revenue from own sources	36,599	14,230	58,469	34,548	375,275	514,631	70,593	84,345	156,221	151,189	2,498	6,176	1,504,774
General purpose transfers from other levels of government	132,246	23,034	132,944	111,323	814,106	40,788	66,275	112,423	16,846	3,054	7,051	48,865	1,508,954
Specific purpose transfers from other levels of government	119,444	28,495	119,791	119,316	477,349	1,059,634	176,728	138,635	277,283	310,177	9,003	14,979	2,850,834
Total	439,377	97,960	555,052	506,212	5,120,468	5,656,382	709,508	639,773	1,285,221	1,664,553	24,593	76,875	16,775,975
Gross general expenditure by function													
General government	39,635	7,992	24,195	24,199	220,870	298,410	20,185	24,804	70,242	76,560	2,637	28,733	838,463
Protection of persons and property	11,095	1,590	14,237	11,686	158,477	235,665	21,569	18,973	57,869	45,984	1,846	3,923	582,463
Transportation and communications	64,566	12,635	75,431	65,020	485,540	576,061	57,061	83,003	109,255	186,104	6,432	3,155	1,792,086
Health	83,350	18,884	143,924	108,602	1,295,747	1,798,281	202,988	173,852	365,196	422,251	1,871	7,121	4,422,459
Social welfare	9,873	4,628	49,686	49,686	781,888	539,946	80,309	65,023	129,781	184,074	1,373	4,247	1,950,035
Education	23,341	139,378	139,378	159,079	1,322,514	1,742,416	196,462	148,133	322,870	334,294	6,543	26,555	4,639,237
Natural resources	127,671	1,604	7,907	16,342	70,078	95,587	24,915	20,748	49,305	77,041	870	367,999	870,367
Agriculture, trade and industry, and tourism	32,817	6,965	18,258	9,832	126,323	95,674	16,948	33,946	78,946	18,946	425	3,652	382,267
Housing	7,281	1,901	2,612	1,716	37,509	212,433	1,717	18,007	27,540	74,545	72	2,845	382,463
Debt charges	50,879	8,090	65,045	33,429	226,089	359,750	44,736	41,037	80,964	32,187	1,724	2,106	946,036
General purpose transfers to other levels of government	2,880	577	3,290	—	168,545	71,936	13,316	—	41,532	47,927	—	—	350,004
All other expenditures	55,891	6,285	25,760	36,918	140,088	137,426	33,539	12,067	37,637	29,616	2,702	7,354	525,283
Total	547,289	99,337	566,306	514,793	5,033,670	6,162,408	713,746	620,147	1,416,138	1,519,529	25,690	90,955	17,310,008

20.18 Liabilities of provincial and territorial governments as at Mar. 31, 1971 and 1972 (thousand dollars)

Province or territory and year		Short-term bank loans and over-drafts	Payables	Loans and advances	Treasury bills	Savings bonds	Bonds and debentures	Notes	Deposits and other liabilities	Total
Newfoundland	1971	13,960	7,282	6,433	288	—	620,604	—	22,674	671,241
	1972	38,430	8,290	21,708	28,191	—	674,754	—	47,737	819,110
Prince Edward Island	1971	5,263	6,557	6,858	8,500	—	91,918	—	8,194	127,290
	1972	1,034	6,592	10,401	5,000	—	100,468	—	10,781	134,276
Nova Scotia	1971	920	77,291	23,186	—	—	917,821	—	40,761	1,059,979
	1972	35,038	66,567	42,055	—	—	977,686	—	33,943	1,155,289
New Brunswick	1971	—	73,071	—	—	—	483,864	—	23,841	580,776
	1972	—	72,634	12,608	49,759	—	523,650	—	21,474	680,125
Quebec	1971	—	382,242	360,877	12,400	146,718	2,215,699	—	126,269	3,244,205
	1972	55,064	438,548	467,117	7,000	269,614	2,494,135	—	131,394	3,862,872
Ontario	1971	—	80,243	149,410	—	—	5,133,742	194	239,274	5,602,863
	1972	15	104,977	161,428	190,000	—	6,023,340	—	249,630	6,729,390
Manitoba	1971	43,930	26,418	21,584	40,267	60,747	503,036	—	46,941	742,923
	1972	94,958	24,981	34,614	36,593	55,726	521,737	—	51,768	820,377
Saskatchewan	1971	29,333	858	33,218	13,000	14,570	649,004	—	1,374	741,357
	1972	33,161	2,593	31,763	13,000	12,615	688,236	—	2,371	783,739
Alberta	1971	—	71,525	—	3,565	—	1,084,507	39,000	13,823	1,212,420
	1972	—	97,202	4,803	3,081	—	1,263,040	39,000	13,157	1,420,283
British Columbia	1971	4,982	43,416	—	6,595	—	478,102	—	9,589	542,684
	1972	16,818	40,989	—	5,613	—	536,663	—	12,694	612,777
Yukon Territory	1971	—	1,012	25,758	—	—	—	—	1,178	27,948
	1972	—	1,430	28,823	—	—	—	—	1,586	31,839
Northwest Territories	1971	—	9,108	31,212	—	—	—	—	1,553	41,873
	1972	—	8,060	48,313	—	—	—	—	1,849	58,222
Canada	1971	98,388	779,023	658,536	84,615	222,035	12,178,297	39,194	535,471	14,595,559
	1972	274,518	872,863	863,633	338,237	337,955	13,803,709	39,000	578,384	17,108,299

20.19 Liabilities guaranteed by provincial and territorial governments¹ as at Mar. 31, 1971 and 1972 (thousand dollars)

Province or territory and year		Bonds and debentures	Bank loans	Other	Total
Newfoundland	1971	154,470	46,689	96,333	297,492
	1972	136,242	129,509	106,664	372,415
Prince Edward Island	1971	10,714	4,325	387	15,426
	1972	10,218	8,700	376	19,294
Nova Scotia	1971	38,434	5,649	421	44,504
	1972	80,534	29,176	5,500	115,210
New Brunswick	1971	301,013	10,517	—	311,530
	1972	329,453	19,314	2,606	351,373
Quebec	1971	2,821,106	152,911	155,844	3,129,861
	1972	3,072,993	166,038	110,575	3,349,606
Ontario	1971	2,175,837	36,986	192,000	2,404,823
	1972	2,495,200	41,413	228,650	2,765,263
Manitoba	1971	708,007	—	5,000	713,007
	1972	822,433	—	5,000	827,433
Saskatchewan	1971	17,899	7,815	48,945	74,659
	1972	52,862	9,465	54,163	116,490
Alberta	1971	413,275	17,235	16,289	446,799
	1972	461,184	43,128	11,643	515,955
British Columbia	1971	2,292,104	76	—	2,292,180
	1972	2,503,597	62	—	2,503,659
Northwest Territories	1971	—	152	—	152
	1972	—	171	—	171
Canada	1971	8,932,859	282,355	515,219	9,730,433
	1972	9,964,716	446,976	525,177	10,936,869

¹Excludes liabilities of provincial government special funds guaranteed by provincial governments but considered as provincial government liabilities.

20.20 Bonds and debentures¹, by market, of provincial governments outstanding as at Mar. 31, 1971 and 1972²

Province and year		Domestic	Foreign			Total
			Traditional		International	
			United States	Europe		
Newfoundland	1971	304,912	123,896	53,809	67,671	550,288
	1972	305,761	172,533	45,033	63,509	586,836
Prince Edward Island	1971	69,500	8,559	—	—	78,059
	1972	74,500	8,489	—	—	82,989
Nova Scotia	1971	297,745	449,840	—	27,500	775,085
	1972	322,745	431,775	—	44,715	799,235
New Brunswick	1971	260,877	104,682	—	9,500	375,059
	1972	250,529	128,490	—	9,000	388,019
Quebec	1971	1,620,474	203,132	139,721	79,540	2,042,867
	1972	1,764,245	288,361	100,940	68,977	2,222,523
Ontario	1971	1,023,946	1,015,844	104,191	1,004	2,144,985
	1972	1,119,752	1,065,312	104,191	—	2,289,255
Manitoba	1971	113,175	175,000	27,937	—	316,112
	1972	99,275	155,000	26,808	—	281,083
Saskatchewan	1971	231,276	168,888	25,153	—	425,317
	1972	231,277	165,387	25,154	—	421,818
Alberta	1971	578,013	144,590	—	1,763	724,366
	1972	678,013	139,429	—	346	817,788
British Columbia	1971	125,750	150,604	—	22,500	298,854
	1972	125,000	146,987	—	22,500	294,487
Total	1971	4,625,668	2,545,035	350,811	209,478	7,730,992
	1972	4,971,097	2,701,763	302,126	209,047	8,184,033

¹Includes savings bonds.²All figures in thousand dollars.

20.21 General revenue of local governments, fiscal years ended nearest Dec. 31, 1970 and 1971 (thousand dollars)

Source	Nfld.	PEI	NS	NB	Que.	Ont.	Man.	Sask.	Alta.	BC	YT	NWT	Canada
1970 (Gross general revenue)													
Taxes, general and school	7,267	5,489	63,498	13,695	704,104 ¹	1,352,017	129,462	142,800	219,048	344,922	349	1,014	2,983,665
Real property	0	331	7,915	—	54,476 ²	184,197	1,140	10,075	17,752	11,579	...	70	3,456
Personal property	2,680	365	3,562	—	...	...	692	3,766	...	...	...	...	294,614
Business	366	157	2,428	—	7,403 ³	...	...	...	...	...	...	...	2,958
Poll	—	—	—	—	...	...	...	...	...	...	...	...	11,861
Sales and amusement	337	51	758	11	160,152	35,397	7,971	8,560	18,411	26,524	48	48	258,268
Special assessments (owner's share)	1,168	—	536	—	40,204	28	...	...	...	50	...	...	42,006
Other	11,888	6,593	78,717	13,706	966,339	1,571,611	148,951	165,208	255,211	383,075	397	1,132	3,602,828
Total, taxes	458	115	2,188	714	17,909	23,055	3,802	3,469	13,116	15,041	117	147	80,131
Privileges, licences and permits	2,278	837	8,453	6,649	36,660	152,210	18,857	19,789	65,636	37,038	311	354	349,072
Sales and services	11	120	1,621	176	23,673	18,662	3,153	2,757	6,638	6,057	17	15	62,900
Fines and penalties	51	30	1,120	90	10,425	15,392	2,768	2,768	5,483	5,641	32	15	43,809
Interest, discount, etc.	—	120	11	142	2,372	4,437	4,437	4,437	16,442	2,613	—	—	30,440
Own enterprise contributions	1,625	68	3,989	1,207	25,650	35,532	12,591	4,860	11,732	5,479	7	322	103,062
Other revenue from own sources	16,311	7,883	96,099	22,684	1,083,028	1,816,462	194,419	203,288	374,258	454,944	881	1,985	4,272,242
Total, revenue from own sources	25	84	1,451	2,247	3,061	19,352	1,161	469	874	2,088	—	2	30,814
Conditional transfers from:	3,184	11,129	90,302	597	794,644	1,257,052	127,398	103,630	223,558	284,772	136	1,080	2,897,482
Federal government	3,209	11,213	91,753	2,844	797,705	1,276,404	128,559	104,099	224,432	286,860	136	1,082	2,928,296
Provincial governments	—	—	—	—	—	—	—	—	—	—	—	—	—
Total, conditional transfers	219	95	3,696	—	3,287	25,654	3,189	1,588	3,082	3,178	98	344	44,430
Unconditional transfers	—	20	—	—	403	—	—	108	3,982	—	—	—	531
From governments	—	7	890	—	2,321	7,102	2,959	692	3,982	632	—	126	18,711
Federal — grants in lieu of taxes	1,952	517	4,930	15,611	132,815	55,620	7,314	—	37,533	—	254	380	256,926
Provincial — grants in lieu of taxes	—	—	—	—	—	—	—	—	—	—	—	—	—
Other — other	—	—	—	—	—	—	—	—	—	—	—	—	—
From government enterprises ^a	117	—	2,955	—	2,767	4,119	1,442	106	—	1,292	—	—	12,798
Federal	—	—	1,577	—	330	12,352	2,149	2,314	1,334	2,819	—	—	22,875
Provincial	—	—	—	—	—	—	—	—	—	—	—	—	—
Total, unconditional transfers	2,288	639	14,048	15,611	141,923	104,847	17,053	4,808	45,931	7,921	352	850	356,271
Total, transfers	5,497	11,852	105,801	18,455	939,628	1,381,251	145,612	108,907	270,363	294,781	488	1,932	3,284,567
Gross general revenue	21,808	19,735	201,900	41,139	2,022,656	3,197,713	340,031	312,195	644,621	749,725	1,369	3,917	7,556,809
1971 (General revenue)													
Revenue from own sources	18,345	9,403	116,577	24,836	1,195,753	1,966,777	227,034	222,007	413,981	510,230	1,142	3,407	4,709,492
Taxes	13,002	7,817	89,321	15,425	923,059	1,656,639	157,277	168,122	282,806	413,224	490	1,352	3,728,534
Real property	7,566	6,338	74,775	15,425	1,419,329	1,419,329	140,191	144,439	247,253	383,172	447	1,210	3,201,112
Special assessments	407	239	831	—	70,099	41,777	4,519	10,914	16,817	17,262	43	66	162,974
Personal property	144	282	8,412	—	—	—	1,347	—	—	—	—	—	10,185
Corporation and business	2,845	586	4,201	—	57,837	194,915	10,505	11,125	18,736	12,685	...	76	313,511
Other	2,040	372	1,102	—	34,794	—	715	1,624	—	105	...	...	40,752
Grants in lieu of taxes	2,086	159	9,765	—	14,320	51,198	12,901	5,225	17,464	8,394	92	587	122,191
Federal government	194	133	3,929	—	2,196	25,196	3,474	995	3,595	2,739	92	277	44,901
Provincial government	117	5	3,170	—	4,270	5,258	1,189	266	1,267	1,267	—	—	14,012
Provincial government enterprises	430	20	902	—	2,803	4,568	383	383	6,972	1,042	—	310	20,976
Local government enterprises	—	—	1,764	—	642	16,176	2,410	2,216	6,881	2,617	—	—	25,825
Non-government organizations	1,345	1	—	—	3,858	—	2,282	862	6,881	16	—	—	7,743

20.21 General revenue of local governments, fiscal years ended nearest Dec. 31, 1970 and 1971 (thousand dollars) (concluded)

Source	Nfld.	PEI	NS	NB	Que.	Ont.	Man.	Sask.	Alta.	BC	YT	NWT	Canada
1971 (concluded)													
Sales of goods and services	2,043	1,028	10,898	6,857	172,079	149,926	32,718	27,255	50,765	52,877	383	1,243	508,072
Water	1,943	408	5,093	6,210	124,926	89,165	16,378	11,977	23,229	25,680	222	476	305,709
Other	1,998	620	5,805	6,447	47,153	60,761	16,340	15,278	27,536	27,197	161	767	202,363
Rentals	147	19	513	92	7,550	8,268	469	899	6,262	4,901	15	86	29,218
Concessions and franchises	353	55	982	439	9,004	17,504	2,938	1,721	3,318	9,974	86	78	6,420
Licences and permits	140	204	704	208	8,791	12,766	2,362	5,431	7,081	9,974	—	—	50,327
Remittances from own enterprises	77	1553	208	208	8,791	12,766	2,362	5,431	14,117	2,336	—	—	22,836
Interest	17	16	1,095	47	11,712	14,216	2,301	1,092	6,537	2,938	20	6	38,157
Interest and penalties on taxes	17	144	1,674	202	13,901	14,216	1,608	1,704	5,026	2,106	26	19	39,450
Fines	598	18	1,572	1,143	35,337	46,557	14,416	6,206	19,875	2,672	20	7	35,854
Miscellaneous	17,750	13,217	125,410	20,633	1,099,577	1,758,025	173,658	170,288	391,494	349,530	742	1,838	4,122,162
Transfers													
General purpose	3,851	544	5,583	17,108	170,505	68,730	7,301	3,037	38,038	—	420	455	315,572
Provincial governments	13,899	12,673	119,827	3,525	929,072	1,689,295	166,357	167,251	353,456	349,530	322	1,383	3,806,590
Federal government	5,360	401	5,216	2,971	20,084	32,395	3,917	3,016	4,617	10,028	50	249	88,304
Provincial governments	8,539	12,272	114,611	554	908,988	1,656,900	162,440	164,235	348,839	339,502	272	1,134	3,718,286
Total, general revenue	36,095	22,620	241,987	45,469	2,295,330	3,724,802	400,692	392,295	805,475	859,760	1,884	5,245	8,831,654

¹Includes \$59,950,000 special taxes, and \$423,600,000 for school tax revenue.

²Amusement tax only (Quebec).

³Grants are mostly in lieu of taxes.

20.22 General expenditure of local governments, fiscal years ended nearest Dec. 31, 1970 and 1971 (thousand dollars)

Function	Nfld.	PEI	NS	NB	Que.	Ont.	Man.	Sask.	Alta.	BC	YT	NWT	Canada
1970 (Gross general expenditure)													
General government services	4,203	399	9,518	4,163	132,102	100,365	17,538	13,136	22,663	30,101	268	414	334,870
Protection of persons and property	1,632	958	13,879	10,876	178,926	265,896	23,648	17,843	48,178	66,080	231	192	628,339
Public works	4,713	995	9,385	12,582	229,536	428,467	38,549	44,574	100,565	67,063	253	614	937,296
Sanitation and waterworks	3,992	731	17,450	10,730	143,167	197,713	21,757	20,300	53,602	65,292	995	632	536,361
Health	9	—	15,313	89	11,246	65,970	4,397	10,276	44,316	5,029	11	19	156,676
Social welfare	—	42	15,655	32	6,135	174,593	6,557	2,879	10,712	81,326	—	—	297,931
Recreation and community services	834	594	3,554	4,635	71,048	154,770	126,646	10,656	34,226	40,330	104	527	333,924
Education (excl. debt charges) ¹	1,000	16,480	114,705	66	1,120,979	1,729,603	180,634	157,989	338,375	376,845	—	954	4,037,630
Debt charges (excl. retirement and sinking fund contributions)	4,985	1,580	11,892	4,522	218,174	199,157	19,331	17,157	42,173	51,130	33	118	570,252
Debt interest ²	1,536	1,132	10,035	4,146	208,845	183,547	17,455	14,611	40,231	46,110	33	94	527,775
Other long-term interest	—	152	253	—	3,894	—	361	213	1,883	—	—	—	6,779
Other	3,449	296	1,604	376	5,435	15,610	1,515	2,333	1,919	3,137	—	24	35,698
Own enterprises	640	—	621	—	335	26,985	5,944	1,292	2,912	1,154	5	—	38,888
Other expenditure	587	306	8,646	1,107	15,168	76,893	5,355	9,192	21,241	22,099	98	134	160,826
Provision for reserves	395	263	2,375	81	5,572	37,039	4,576	6,287	4,038	16,659	50	7	77,342
Other	192	43	6,271	1,026	9,596	39,854	779	2,905	17,203	5,440	48	127	83,484
Gross general expenditure	22,595	22,086	220,618	48,802	2,126,816	3,420,412	336,356	305,294	718,963	805,449	1,998	3,604	8,032,993

20.22 General expenditure of local governments, fiscal years ended nearest Dec. 31, 1970 and 1971 (thousand dollars) (concluded)

Function	Nfld.	PEI	NS	NB	Que.	Ont.	Man.	Sask.	Alta.	BC	YT	NWT	Canada
1971 (concluded)													
Recreation and culture	1,334	541	5,489	5,459	106,341	179,148	16,386	9,847	42,030	54,332	198	617	421,722
Recreational facilities	1,037	498	4,249	5,284	54,160	113,699	10,942	5,954	30,469	41,946	190	580	269,008
Cultural facilities	5	24	1,240	138	8,651	6,495	4,833	3,658	9,901	10,665	1	7	98,077
Other	292	19	—	37	43,530	58,453	611	235	1,660	1,721	7	30	54,637
Education — primary and secondary	921	20,214	123,486	68	1,255,423	1,857,535	193,652	171,107	368,106	424,612	—	1,369	4,416,493
Fiscal services	5,326	1,842	16,164	5,134	294,766	339,179	34,155	28,028	83,223	83,223	140	208	873,703
Debt charges	4,307	1,637	12,853	4,837	289,595	230,396	20,375	19,312	52,558	64,660	71	197	700,798
Interest on short-term borrowing	507	117	85	825	11,844	11,844	1,003	223	—	2,102	—	9	16,715
Interest on long-term borrowing	2,406	1,445	11,206	4,473	256,338	218,394	18,087	16,351	48,855	58,216	71	174	636,016
Other	1,394	75	1,562	364	32,432	158	2,738	7,338	3,703	4,342	—	14	48,067
Transfers to reserves and allowances	184	205	2,984	297	5,171	76,052	6,778	7,274	7,055	18,287	69	11	124,367
Transfers to own enterprises	835	—	327	—	—	32,731	7,002	1,442	5,425	276	—	—	48,038
Other services	118	—	1,769	1,465	74	10,676	—	—	9,146	913	11	4	24,176
Total, general expenditure	48,154	25,972	254,817	57,873	2,443,510	4,002,419	402,514	375,173	863,821	956,386	2,091	6,829	9,439,559

¹Education expenditures for Quebec estimated.

²School debt interest in Quebec estimated at \$82 million.

20.23 Direct debt of local governments, fiscal years ended nearest Dec. 31, 1970 and 1971 (thousand dollars)

Year and direct debt	Nfld.	PEI	NS	NB	Que.	Ont.	Man.	Sask.	Alta.	BC	YT	NWT	Canada
1970													
Debtenture debt	25,554	17,104	176,709	66,522	2,365,543	3,602,599	369,975	261,366	940,769	840,896	1,267	2,642	8,670,946
Less sinking funds	141	4,176	2,805	2,487	6,900	417,364	37,982	32,635	6,598	73,703	—	—	586,791
Net debtenture debt	25,413	12,928	171,904	64,035	2,358,643	3,185,235	331,993	228,731	934,171	767,193	1,267	2,642	8,084,155
Temporary loans and bank overdrafts	19,540	1,375	37,919	9,233	181,661	226,008	57,534	15,151	20,229	28,212	18	803	597,783
Accounts and other payables	22,901	977	20,496	9,706	142,119	174,242	16,507	23,247	51,388	30,883	158	754	466,578
Other liabilities	6,182	64	7,602	4,333	106,124	47,072	17,011	9,670	32,213	24,905	35	295	255,506
Total, direct debt less sinking funds	74,036	15,344	237,921	87,307	2,788,547 ¹	3,605,657 ²	423,045	276,799	1,038,201	851,193	1,478	4,494	9,404,022
1971													
Long-term (debtentured)	28,934	16,547	186,297	72,871	2,447,123	3,799,902	383,424	261,636	1,001,019	898,399	1,559	3,391	9,101,102
Less sinking funds	—	4,586	1,759	2,152	3,602	417,363	40,638	33,234	3,936	70,752	—	—	580,022
Net long-term (debtentured)	28,934	11,961	184,538	70,719	2,443,521	3,382,539	342,786	228,402	997,083	827,647	1,559	3,391	8,521,080
Short-term borrowings	20,928	1,004	40,945	10,742	226,666	153,841	60,014	20,882	23,075	48,631	13	1,570	608,311
Accounts and other payables	36,398	1,756	22,538	10,325	175,563	209,389	39,927	25,523	28,710	45,476	289	1,029	666,923
Other liabilities	8,737	235	9,063	4,534	68,906	36,678	9,537	29,700	41,797	23,048	40	379	232,654
Total, direct debt less sinking funds	94,997	14,956	257,084	96,320	2,914,656	3,782,447	452,264	302,507	1,160,665	944,802	1,901	6,369	10,028,968

¹Data for Quebec schools not available. Includes \$30,599,000 debentures of the Montreal Transportation Commission guaranteed by the City of Montreal.

²Includes other long-term debt due to Ontario Water Resources Commission.

20.24 Personal income tax payable on various levels of income, 1974 (dollars)

Status	Income ¹	Basic federal tax	Federal tax cut ²	Federal income tax ³	Provincial income tax ⁴
Single taxpayer — no dependents	1,706	—	—	—	—
	2,000	16	16	—	5
	2,500	79	79	—	24
	3,000	167	100	67	51
	4,000	352	100	252	107
	5,000	544	100	444	166
	8,000	1,187	100	1,087	362
	10,000	1,660	100	1,560	506
	20,000	4,706	235	4,471	1,435
	50,000	16,363	500	15,863	4,991
	100,000	39,226	500	38,726	11,964
Married taxpayer — no dependents	1,706	—	—	—	—
	2,000	—	—	—	—
	2,500	—	—	—	—
	3,000	—	—	—	—
	4,000	73	73	—	22
	5,000	252	100	152	77
	8,000	860	100	760	262
	10,000	1,304	100	1,204	398
	20,000	4,184	209	3,975	1,276
	50,000	15,722	500	15,222	4,795
	100,000	38,525	500	38,025	11,750
Married taxpayer — two children under age 16	1,706	—	—	—	—
	2,000	—	—	—	—
	2,500	—	—	—	—
	3,000	—	—	—	—
	4,000	—	—	—	—
	5,000	132	100	32	40
	8,000	726	100	626	221
	10,000	1,157	100	1,057	353
	20,000	3,960	198	3,762	1,208
	50,000	15,446	500	14,946	4,711
	100,000	38,224	500	37,724	11,658

¹It is assumed that all income is from salary or wages and all taxpayers take the standard deduction of \$100 and the employment expense deduction. No account has been taken of other deductions such as for child care expenses, unemployment insurance contributions or the additional old age deduction.

²Tax saving attributable to the 5% minimum \$100, maximum \$500 tax cut applicable to 1973 and subsequent years.

³Federal tax is for income earned in any province except Quebec. Excluded are the proposals from the May 6, 1974 budget.

⁴The provincial income tax is calculated at 30.5% of basic federal tax otherwise payable. Some provinces impose tax at a rate higher than 30.5%.

20.25 Special excise taxes levied as at Dec. 31, 1973

Item	Tax
Cigarettes	3¢ per 5 cigs.
Cigars	17½¢ ad valorem
Pipe tobacco, cut tobacco, snuff	90¢ per lb.
Jewellery, including articles of ivory, amber, shell, precious or semi-precious stones, clocks, watches, goldsmiths' and silversmiths' products, except gold-plated or silver-plated ware for the preparation or serving of food or drink ¹	10% ad valorem
Lighters	10¢ per lighter
Playing cards	20¢ per pack
Slot machines — coin, disc or token-operated games or amusement devices	10% ad valorem
Matches	10% ad valorem
Tobacco, pipes, cigar and cigarette holders and cigarette rolling devices	10% ad valorem
Wines ²	
Wines of all kinds containing not more than 7% absolute alcohol by volume	25¢ per gal
Non-sparkling wines containing more than 7% absolute alcohol by volume but not more than 40% proof spirit	50¢ per gal
Sparkling wines	\$2.50 per gal
Wines (additional excise taxes) ³	
Wines of all kinds containing not more than 7% absolute alcohol by volume	2½¢ per gal
Wines of all kinds containing more than 7% absolute alcohol by volume	5¢ per gal
Insurance premiums paid to British or foreign companies not authorized to transact business in Canada or to non-resident agents of authorized British or foreign companies	10% of net premium for property surety, fidelity and liability insurance. (Most other kinds of insurance are exempt.)

All the foregoing items, except insurance premiums, are also subject to the general sales tax of 12%. Cigarettes, cigars and tobacco are subject to additional taxes under the Excise Act (referred to as excise duties).

¹Beginning Feb. 19, 1973 clocks and watches valued at less than \$50 are not subject to the 10% special excise tax.

²These taxes apply only to wines manufactured in Canada. The customs tariff on wines includes a levy on imported wines to correspond to the taxes on domestic production.

³These taxes apply to both domestic and imported wines.

Sources

- 20.1 - 20.8 Public Finance Division, Institutional and Public Finance Statistics Branch, Statistics Canada.
20.9 - 20.12 Statistics Section, Systems and Planning Branch, Department of National Revenue, Taxation.
20.13 - 20.14 Business Finance Division, General Statistics Branch, Statistics Canada.
20.15 Public Finance Division, Institutional and Public Finance Statistics Branch, Statistics Canada.
20.16 Federal-Provincial Relations Division, Department of Finance.
20.17 - 20.23 Public Finance Division, Institutional and Public Finance Statistics Branch, Statistics Canada.
20.24 - 20.25 Personal, Commodity and Estate Tax Division, Department of Finance.

Chapter 21

Selected economic indicators

In this chapter various statistical statements and studies are presented in which broad areas of Canadian economic activity are covered in a comprehensive but summary form. The chapter is based on the Canadian System of National Accounts (SNA) which consists of national income and expenditure accounts, indexes of real domestic product, the balance of international payments and financial flows. Input-output tables are also part of the System of National Accounts but have not been included in this analysis. The integrated aggregative economic accounts provide an interrelated framework for analysis of the Canadian economy and its relationship with other countries. In its broad outline, the Canadian System of National Accounts bears a close relationship to the international standard as described in the United Nations publication *A system of national accounts*. To complete the economic picture a section on price indexes is also included.

21.1 National income and expenditure

National income and expenditure accounts provide accounting summaries for the nation as a whole and portray economic activity in terms of transactions taking place between major groups of transactors, namely, governments, corporate and government business enterprises, persons and unincorporated businesses and non-residents. By combining and summarizing these operations into their various classes, information may be obtained on the functioning of the economy which is of particular interest to governments concerned with problems of unemployment, taxation and prices, and to businessmen concerned with programs of investment and marketing.

Tables 21.1 - 21.9 are based on the revised historical series of the national income and expenditure accounts. Annual coverage since 1926 is available in Statistics Canada occasional publication *Income and expenditure accounts, 1926 to 1973*, Catalogue No. 13-531.

National income. Net national income at factor cost measures the current earnings of Canadian factors of production (land, labour and capital) from productive activity. It includes wages and salaries, profits, interest, net rent and net income of farm and non-farm unincorporated business.

Gross national product (GNP), by totalling all costs arising in production, measures the market value of all final goods and services produced in the current period by Canadian factors of production. It is equal to national income plus net indirect taxes (indirect taxes less subsidies) plus capital consumption allowances and miscellaneous valuation adjustments.

Personal income is the sum of current receipts of income whether or not these receipts represent earnings from production. It includes transfer payments from government (such as family allowances, unemployment insurance benefits and war service gratuities) in addition to wages and salaries, net income of farm and non-farm unincorporated business, interest, dividends and net rental income of persons. It does not include undistributed profits of corporations and other elements of the national income not paid out to persons.

Gross national expenditure (GNE) measures the same aggregate as gross national product (i.e. total production of final goods and services at market prices) by tracing the disposition of production through final sales to persons, governments and business on capital account, including changes in inventories, and to non-residents (exports). Imports of goods and services, including payments of interest and dividends to non-residents, are deducted since the purpose is to measure only Canadian production.

21.1.1 Economic activity in 1973

The strong expansion of the Canadian economy under way since the beginning of 1971 continued in 1973 at an accelerated pace. A 6.8% growth in production was accompanied by an even more rapid rise in prices and by the largest percentage employment gain on record. Since the labour force also registered an increase of record proportions, the rate of unemployment remained high in 1973, although it declined to 5.6% from 6.3% in 1972. As the year progressed, an extremely strong rise in unfilled orders and lengthened delivery dates became

visible, suggesting that a number of industries were encountering capacity constraints in plant and equipment and shortages of certain materials and specific labour skills.

Inflation was particularly severe in 1973 especially in the case of basic commodities such as raw materials and food products. The price increases were mostly due to world-wide demand pressures together with shortages of supply, particularly in the agricultural sector. The situation was exacerbated in the final quarter of the year by the international energy crisis which was accompanied by very sharp increases in crude oil prices posted by all producing countries. Though the impact of this major development on the Canadian economy appears to have been small in 1973 the future repercussions on the world economy are a matter of considerable concern.

Gross national product (GNP) at market prices rose by \$15,409 million, or 14.9% to reach a level of \$118,902 million. This was the largest percentage gain registered since the early 1950s, when expansion was associated with rapidly rising prices during the Korean war period. The 7.6% rise in the over-all implicit price index in 1973 was one of the highest on record, far exceeding the rise of 4.8% in 1972 and of 3.1% in 1971. However, the growth in GNP of 6.8% in real terms, that is after removing that part of the increase which reflected higher prices rather than greater output, was well above that experienced in any year since 1966 when it was 6.9%. By comparison, real growth amounted to 5.8% in 1972 and to 5.6% in 1971.

As in the previous two years, consumer outlays, especially on automobiles and other durable goods, and housing construction continued to provide a major impetus to expansion. In 1973 sharp increases in business fixed investment in non-residential structures and in machinery and equipment gave an additional important boost to the economy. The rate of increase of 17.6% in the latter categories occurred after six years of relatively low outlays. There were indications that the fast pace of business fixed investment in plant and equipment would continue in 1974. On the other hand, the rate of non-farm inventory investment for the year as a whole showed only a modest increase. The external sector continued to display buoyancy with both exports and imports of goods and services posting large gains. Economic growth was mirrored on the income side by sharp rises in all components but most spectacularly in corporation profits and in farm income.

Within the year the pace of activity was uneven. There was widespread demand strength in the opening quarter which showed an exceptional 3.0% rise in real growth on the heels of a strong 2.5% rise in the closing quarter of 1972. The initial burst of activity, which put the economy at a much higher level than the average performance in 1972, was followed by two quarters of relatively slow growth, partly caused by developing supply constraints and by the disruptive effects of a railway strike and other labour disputes in the third quarter. The sharp rebound in the fourth quarter, which showed a 2.6% increase in real growth, was general and included a substantial build-up of non-farm inventories at wholesale and retail trade levels apparently related to the resumption of rail shipments following the strike.

21.1.2 Consumer demand

In line with very strong increases in personal disposable income and in consumer credit outstanding, consumer outlays on goods and services registered an unusually large gain for the second consecutive year. Personal expenditure rose \$8,757 million, or 14.5% and accounted for almost 57% of the rise in GNP. In real terms, the rise of 8.0%, which surpassed rises of 6.9% and 5.3% in 1972 and 1971, respectively, was much higher than any recorded since 1955. Growth in consumer spending outpaced the rise in personal disposable income resulting in a decline in the savings ratio (personal saving as a proportion of personal disposable income) from 8.3% in 1972 to 7.4% in 1973. This ratio, however, remained very high by historical standards.

The 18% increase in personal expenditure on durable goods was very broadly based. About one third of the \$1,656 million increase consisted of greater expenditures on new automobiles. The over-all strength of demand for the latter, evident in the previous two years, continued into the first quarter of 1973, showing an acceleration in spending from 11% growth in the fourth quarter of 1972 to 14% in the first quarter of 1973. These outlays declined over the rest of the year. Expenditure on durable goods other than automobiles rose by 18%. In particular there were strong gains in outlays on furniture and home appliances reflecting the concurrent boom in the housing sector. A modest 1.3% rate of price increase for the durable goods category as a whole resulted in a volume gain of 16.8%, up from 14.7% in the previous year.

Expenditure on semi-durable goods and on non-durable goods also rose at unusually strong rates, the former by 17.1% and the latter by 16.2%. Here, however, much of these gains consisted of higher prices, especially in non-durable goods, where a price rise of 10.1% was registered, largely centred in the prices of food and fuels. In volume terms, outlays on semi-durables rose by 11.8% and on non-durables by 5.6%. In semi-durables, there were very strong gains in outlays on clothing and footwear. Expenditure on services showed some acceleration, from 8.8% in 1972 to 10.8% in 1973.

21.1.3 Business fixed capital outlays

All components of gross fixed capital formation displayed strength in 1973. The housing sector, contrary to earlier expectations, registered a strong gain of 23% after sharp rises in 1971 and 1972. Even in volume terms, the gain of about 13% was considerable. Housing starts rose by over 7% to reach a record level of 269,000 units. As in the previous year, the rise was concentrated in starts of single detached dwellings.

Business fixed investment in plant and equipment rose by almost 18% in value terms and by about 11% in terms of volume. Both non-residential construction and machinery and equipment spending rose at accelerated rates, but especially the latter which was up by 19%. Rises in machinery and equipment spending were widespread but especially notable in outlays in the manufacturing and utilities industries and on farm machinery and business vehicles.

21.1.4 Inventory investment

Investment in non-farm business inventories rose by only \$159 million to a level of \$923 million. The accumulation was almost equally distributed among the three major industry groups: manufacturing, wholesale trade and retail trade. Within manufacturing, the stocks of industries producing durable goods showed substantial accumulations while the stocks of industries producing non-durable goods were liquidated for the second consecutive year.

At the trade level, increases in the stocks of durable and non-durable goods were of similar magnitudes. The stocks-to-shipments ratio continued the pronounced decline begun in 1971.

21.1.5 Exports and imports

The pace of activity in the external sector quickened markedly in 1973. The value of merchandise exports rose by 26.1%, up from the rise of 12.6% in 1972. The most notable gains occurred in exports of lumber, crude petroleum, wood pulp and automobiles. All of the acceleration (with the exception of automobiles and parts) was due to sharp increases in the prices of certain basic commodities. With a price increase of 16.0% the rate of growth of merchandise exports measured by volume actually decelerated somewhat from 9.1% in 1972 to 8.7%. The value of merchandise imports rose at about the same rate as merchandise exports. However, since the price increase of 8.9% was much smaller than that shown by exports there was a substantial increase of about 15% in volume. Particularly strong increases were recorded in imports of machinery and equipment, in line with rising investment outlays, and of automobiles and parts.

An increase of \$586 million in the surplus in merchandise trade was somewhat offset by an increase in the deficit in the services account, partly owing to increased travel payments and larger outflows of interest and dividends. The deficit on all transactions in goods and services with non-residents declined by \$160 million to a level of \$785 million.

21.1.6 Incomes

Economic expansion was reflected on the income side by extensive gains in practically all components. Labour income (representing over one half of the GNP) rose by over 12%, corporation profits rose by about 36% and accrued farm income rose by 92%. The astounding rise in farm income reflected sharply rising prices in international grain markets.

The acceleration in labour income (the rate of increase in 1972 was 11.0%) resulted from gains in employment and from a rise in average earnings similar to that experienced in the previous year. Wages and salaries rose at similar rates in the goods-producing and the service-producing industries. The gain in the goods-producing industries of 12.5% exceeded the increase of 9.2% in the previous year. Within the goods-producing industries, wages and salaries in manufacturing, up 12.8%, posted their largest gain in many years. Within the service-produc-

ing industries there were higher wages and salaries in trade and in finance, insurance and real estate, in line with significant increases in employment.

The rise of 35.7% in the preliminary estimate of corporation profits represented a sharp acceleration after very large gains of 12.9% in 1971 and 21.1% in 1972. Since 1971 this component has been rising faster than total income generated and now represents 12.0% of GNP, the largest proportion since 1952. Although nearly all industries showed profit increases, especially strong growth was recorded in manufacturing and mining. Within manufacturing, particularly large gains were recorded in textiles, wood, paper and allied industries, primary metals, metal fabricating, non-metallic minerals and refined petroleum products. All mining groups, base metals, oil and gas and other mining increased substantially.

As in the previous year a significant part of the rise in corporation profits and in non-farm unincorporated business income was due to inventory gains resulting from the turnover of goods at rising prices. The inventory valuation adjustment, intended to remove profits that do not reflect current production from income, rose by almost \$1.5 billion in 1973.

21.1.7 Price movements

Strong inflationary tendencies in 1973 translated into a 7.6% rise in the implicit price index for GNP. This index, however, reflects changes both in prices and in the composition of expenditure. Available base-weighted price measures also displayed extraordinarily large increases. The consumer price index also rose by 7.6% while the index of industry selling prices increased by 11.9%.

Although the implicit price indexes of most components of expenditure rose at accelerated rates, price movements in the external sector were dominant factors behind the over-all price change of 7.6%. The explosion in world prices for food, raw materials and metals was reflected in a 14.4% increase in the implicit price index for exports of goods and services. Prices for crude vegetable products rose by 93%, for wheat by almost 55%, for lumber and copper by about 40%, for crude petroleum by 26% and for zinc by about 30%. The export price rise for manufactured goods, on the other hand, rose by a moderate 2.0%, as a slight rise in motor vehicle prices served to dampen the price rise in this group. The implicit price index for imports rose by 8.9% compared with a 2.7% rise in 1972. The 4.3% price increase of manufactured goods largely resulted from a 4.7% rise in the prices of motor vehicles and a 7.3% rise in prices of machinery and equipment.

The movement in the implicit price index for personal expenditure was mainly influenced by the near-doubling of the rate of increase in the index for non-durable goods, from 5.2% in 1972 to 10.1% in 1973. Within non-durables, food prices rose by 15%; there were also sizable increases in the prices of electricity, heating fuel and gasoline. Prices of semi-durable goods accelerated with particularly strong advances in prices of footwear and jewellery. Prices of durable goods, on the other hand, rose by a moderate 1.3%. In the services category, which showed a price acceleration from 5.4% in 1972 to 6.2% in 1973, notable increases were recorded in the prices of insurance and restaurant meals.

Prices associated with business gross fixed capital formation rose 6.7%; the rate of price increase in 1972 had been 4.9%. Construction and machinery and equipment prices both accelerated but the price increases in the construction sector were the strongest. Residential construction prices rose by 9.4% and non-residential construction prices by 7.9%, while machinery and equipment prices advanced a more moderate 4.2%. Rapidly advancing material prices contributed most to the construction price boost. While nearly all materials components rose strongly, the advance was led by the exceptional upward thrust of the prices of lumber and related wood products.

21.1.8 The government sector

Total revenues of all levels of government combined (excluding inter-governmental transfers) rose by over 14% in 1973; this was the largest rate of increase in several years and reflected the continued strong growth in the economy. All revenue categories registered gains. There were sharp increases in returns from both personal direct taxes and corporate direct taxes with much of the gain taking place at the federal government level. A large part of the higher returns from indirect taxes occurred in federal and provincial sales taxes.

The rate of increase in total expenditures, 12.5%, was somewhat lower than in recent years. Over half of the rise was in purchases of goods and services where higher wage and sal-

ary payments were the major factor. The increase in transfer payments to persons was much lower in 1973 than in the previous two years when major legislative changes went into effect. Most of the increase in 1973 was at the federal level and reflected changes in the Old Age Security pension rates and higher Family Allowance rates as well as higher Unemployment Insurance benefit payments.

With revenues rising more sharply than expenditures the government sector moved from a deficit, on a national accounts basis, of \$278 million in 1972 to a surplus of \$612 million in 1973. The federal government recorded a surplus of \$43 million in 1973 compared with a deficit of \$702 million in 1972; deficits at the provincial level narrowed from \$608 million to \$170 million. Partially offsetting these movements was a widening in local government deficits from \$448 million to \$720 million. The surplus in the Canada and Quebec Pension plans rose slightly.

21.2 Domestic product by industry

21.2.1 Indexes of real domestic product

Since the early 1960s Statistics Canada has published a set of production data pertaining to the entire spectrum of Canadian industries in its full industry detail (including the index of industrial production). These data, in the form of production indexes, are measures of value added for each industry revalued in the dollars of the base year. Technically, they are termed "indexes of real domestic product (RDP) at factor cost originating by industry". In constructing the index for total RDP, where the gross output of one industry flows to another industry (intermediate input) and/or to final demand (non-industrial sales), the portion double-counted has been eliminated. This is accomplished by subtracting the intermediate inputs (materials, fuels, advertising, etc.) valued in terms of the dollars of a common base year from the constant dollar value of the gross output to yield a constant dollar value added aggregate.

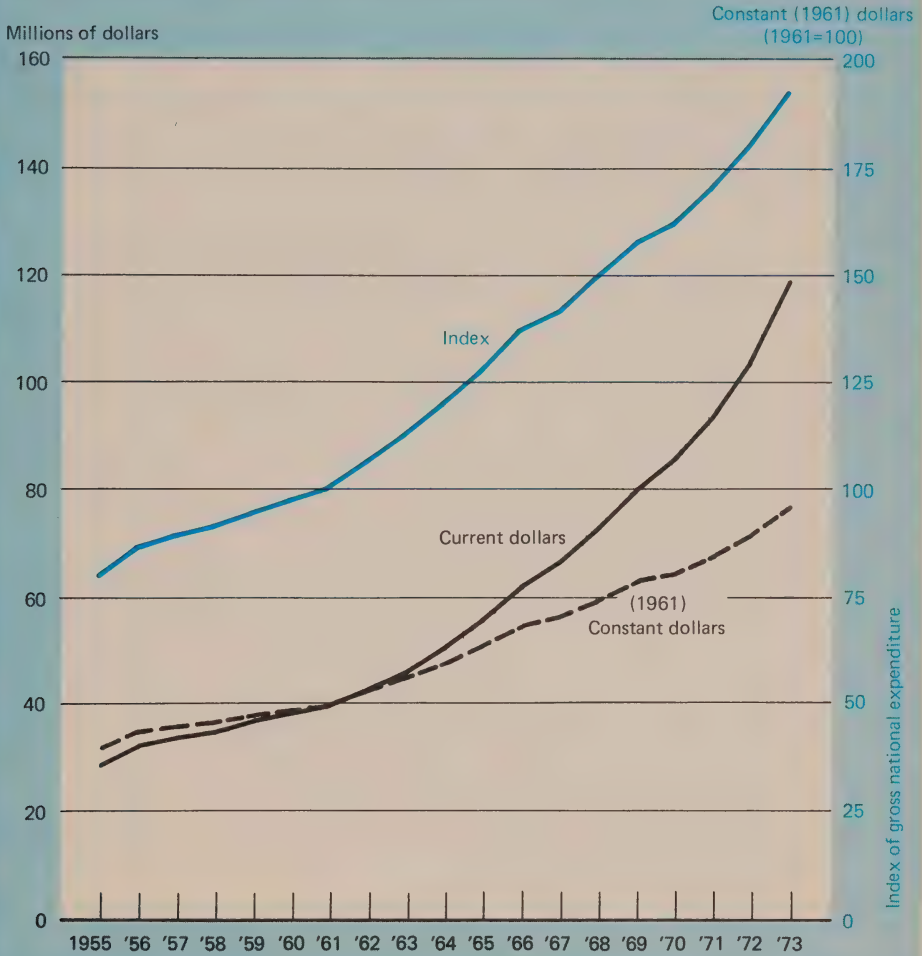
RDP indexes are published on an annual, a quarterly and a monthly basis. The monthly and quarterly data are published both seasonally adjusted and without seasonal adjustment. The seasonally adjusted data are considered to be preferable for the analysis of emerging trends as the strong seasonal fluctuations to which sub-annual data are frequently subject have been removed through the seasonal adjustment process, thus revealing the underlying trend as well as the cyclical and irregular factors affecting the data. In general, the annual indexes are suitable for studies of production trends, growth rates and inter-industry comparisons, whereas monthly indexes provide a much better tool for the study of the cyclical behaviour of industries and short-term changes in production.

Spurred on by strong domestic and foreign demand for the goods and services produced by Canadian industries, total real output in the 1961-73 period achieved an average annual rate of gain of 5.7% in contrast to the average rate of growth of 4.7% in the 1946-61 period. Domestic demand has been influenced by demographic factors operating since World War II; younger age groups are displaying both their purchasing power and changing tastes. Buoyant foreign demand for Canadian commodities has been a dominant force since 1961, with sales of wheat and motor vehicles and parts having recorded the most dramatic gains over the past 12 years. Within this period a generally healthy investment climate has prevailed. Both residential and non-residential construction made good gains. In the case of non-residential construction the rapid pace of activity peaked in 1966 and various inhibiting factors contributed to weakness in the industry into the early 1970s. Since 1971, however, the pace has again increased, particularly in 1973. The durable manufacturing sector was dynamic in response to both domestic and external demands.

The influx of the postwar generation is also reflected in the rapid increase in the labour force. Over most of the period the expanding economy generated sufficient employment opportunities to adequately absorb the increases in the labour force. In the latter part of the 1960s, this influx combined with slackness in the over-all economy to produce a lower rate of growth in labour force employment than in the labour force itself. However, by 1972, the trend had climaxed and by 1973 unemployment rates began to fall.

The rate of growth of the economy decelerated in 1970 but picked up in 1971; the momentum was reasonably sustained in 1972. Real domestic product increased by 5.2% in 1972 following a rise of 5.9% in 1971. Further growth occurred in 1973 when real domestic product rose by 6.9% (Table 21.10).

Gross national product, 1955-73 and index of gross national expenditure



Manufacturing, particularly durable goods manufacturing, has been a leading contributor to the growth of the Canadian economy over most of the period (Table 21.11). The burgeoning motor vehicles and motor vehicles parts industries have been prime movers in the rapid increase in the output of durables. A severe interruption in the strong upward trend in motor vehicle production occurred early in 1966 and persisted until the final quarter of 1966. It has been variously attributed to changes in the general economic conditions in North America and specifically to the 1966 credit squeeze and the upward climb of prices, combined with consumer concern about car safety. Since 1968 production has been hit, directly or indirectly, by strikes and parts shortages and in 1970 output declined markedly as a result of a slump in consumer spending compounded by the impact of the automobile strike in the latter part of the year. There was a strong recovery early in 1971 which raised the level for the year well above that for 1969. In 1972 and 1973 the industry continued to grow although at lower rates than during the 1971 period. An interruption occurred in 1972 when a major producer altered its product lines. In 1973, production was restricted by strikes in two important companies. Cana-

dian demand for automobiles was sustained despite reported shortages and rising prices for gasoline; sales by motor vehicle dealers increased strongly in 1973.

The performance of the construction industry has been a conspicuous feature of the economy. Heavy injections of industrial capital took place in the mid-1960s to develop additional facilities or expand capacity. Pace setters were such industries as petroleum and coal products, chemicals, pulp and paper, and electric power. Outlays for social capital such as hospitals and educational institutions also increased. Construction projects for Canada's Centennial and Expo 67 provided an extra stimulus. However, since 1967, tightened monetary conditions, rising costs, a mid-1969 decision to defer capital cost allowances on commercial projects in some areas and strikes in 1969, 1970 and 1972, all restrained output in this sector. Residential construction tends to be one of the more volatile sectors of the economy. The relevant demographic factors have indicated that a solid demand for housing exists. However, less favourable supply conditions such as scarcity of mortgage funds and rising interest rates and construction costs have from time to time adversely affected residential construction, particularly in 1966, the latter half of 1969 and the first half of 1970. Strikes in 1970 and, to a lesser extent in 1972, exacerbated the situation. However, both private and public mortgage funds have become increasingly available since the latter part of 1970. This impetus has led to continuing growth in construction and other sectors of the economy in 1971, 1972 and 1973.

The community, business and personal services group has grown at a fairly steady pace in the past decade tending to be relatively insensitive to short-term fluctuations and has thus been one of the sustaining forces in the economy. Health and welfare, services to business management and miscellaneous services have been prime contributors since 1968. In 1970 the rate of increase in output of this industry outstripped that of the aggregate output of the economy. Since that time, with the general acceleration in business activity, the traditional growth industries again outpaced the increase in this industry group.

The slowdown in the 1970 growth rate of total real domestic product occurred during the first three quarters of the year. The pick-up in activity in the final quarter was highlighted by the resurgence in residential construction which mitigated the impact of the automobile strike.

In summary, since the end of 1970 total production has increased strongly. At the aggregate level there was renewed strength in domestic demand. Exports of some significant commodities were lower, dampening production in such export-oriented industries as metal mines and pulp and paper in 1971. Newsprint exports increased in 1972 for the first time since 1969. Exports of wheat, coal, crude petroleum and natural gas, among others, continued to increase strongly but these changes were largely due to price increases. In 1973 the rate of growth of exports decreased and in the first quarter of 1974 real merchandise exports actually fell. In 1972 the service-producing industries accounted for the greater part of the change in aggregate real domestic product, led by trade, finance, insurance and real estate, and transportation. In 1973 the goods-producing industries were dominant.

The increase in trade was shared by both wholesale and retail trade. Within retail trade there was strong demand for the goods and services of department stores, variety stores, motor vehicle dealers and furniture, television and radio stores. The motor vehicle dealers sector was particularly significant in 1973. There was strong demand in wholesale trade for automotive parts and accessories, and farm machinery. In output, the manufacturing industries and electric power, gas and water utilities have each exceeded the output of the service-producing industries since 1971. The gains in manufacturing were fairly evenly distributed between the durable and non-durable goods sectors, although the rate of growth tended to be slightly higher for the durables. Residential construction recorded a solid gain in 1973 with housing starts up by 7.4%. A burst of activity in 1971 had led to a 23.0% advance in housing starts. This was followed in 1972 by a 7.0% gain. The advance in residential construction activity in 1972 provided support for the production of building materials and household appliances, as reflected in the gains in such manufacturing industries as wood products, concrete products, cement and major appliances.

21.2.2 Value added for goods-producing industries

The data contained in this Section are published in Statistics Canada report *Survey of production* (Catalogue No. 61-202); data on census value added in selected industries on a "total activity" basis appear in the Appendix to the 1970 issue. The scope of the survey of production is limited to industries engaged chiefly in the production of goods and it measures production

in current dollars. This is in contrast to the real domestic product series which encompasses all industries and measures production in terms of the dollars of a base year — the “constant dollar” calculation.

Tables 21.12 and 21.13 give “census value added” production data classified by province and industry, respectively, on a primary activity basis. Census value added is derived by deducting the cost of materials from the gross value of production (excluding excise and other sales taxes) or revenue. The 1960 Standard Industrial Classification of establishments is the basis of classification in the survey of production. Current dollar census value added in the goods-producing industries increased by 9.2% in 1971 compared with 5.9% in 1970. The agriculture, construction and manufacturing industries were important contributors to this gain.

21.2.3 Aggregate productivity trends

The level of, and changes in, productivity have a vital influence on economic growth, over-all cost structure, international competitiveness and, in the final analysis, on the quality of life. In the measurement of productivity, output is related to one or more kinds of inputs utilized in the production process.

The measures of productivity presented here relate output to a single input only, namely labour time. It must be emphasized that changes in output per unit of labour input cannot be attributed directly and solely to labour; such measures reflect not only changes in the skills and effort of the labour force but also the contribution of other productive resources with which labour works as well as the effectiveness with which all are combined and organized for the purpose of production. In other words, changes in technology, capital investment, capacity utilization, work flow, managerial skills and labour-management relations each have a bearing on movements in what is termed “labour productivity”. The measures of unit labour cost are the ratios of labour compensation to output. Unit labour cost can also be obtained as the ratio of average compensation to productivity; thus unit labour cost will increase when average compensation grows more rapidly than productivity.

Sources of data. The output components of the various indexes of output per unit of labour input and unit labour cost referred to here are the indexes of “real domestic product (RDP) by industry”. These indexes, which were developed within the conceptual framework of the Canadian System of National Accounts, measure in constant dollar terms the contribution of each component industry to total output.

The major sources for the employment and man-hour indexes were the monthly labour force and employment surveys and these were supplemented by data from such sources as the annual censuses of manufactures and mining and the decennial census of population. Since the data from these diverse sources varied considerably in their coverage, concepts and methods of compilation, care had to be exercised in selection, adaptation and combination of the data into aggregate measures of labour input which would be conceptually and statistically consistent, both internally and in relation to the output data. Labour force survey data were used for the paid worker estimates of agriculture and of fishing and trapping while those for manufacturing and mining were based on adjusted annual census data. Estimates for most of the remaining industry divisions were derived from employment survey data. Estimates of other than paid workers (own-account workers, employers and unpaid family workers) were derived mainly from the labour force survey. Estimates of average hours worked, which were needed for the indexes of output per man-hour, were also based on labour force survey data except in the case of manufacturing where man-hours data reported in the census of manufactures were also utilized. Labour compensation is the sum of wages, salaries, supplementary labour income and an imputed labour income for self-employed workers. For imputed labour income the average hourly income of paid workers is attributed to self-employed persons in the same industry division. Indexes of output per person employed, output per man-hour and unit labour cost for commercial industries and the major components are presented in Table 21.14.

Growth rates. Between 1961 and 1972, output per person employed in the commercial industries increased at an average annual rate of 3.4%. Output per man-hour rose at a faster rate, 4.3%, due to a decrease in the length of the average work week (Table 21.14). During the past 12 years the rate of productivity increase has declined. The annual growth of 3.8% in output

per person employed during the 1961-66 period dropped to 3.4% between 1966 and 1972. Corresponding rates for output per man-hour were 4.5% and 4.3%.

Productivity growth in the commercial service-producing industries continued to lag behind the comparable rate of increase in the commercial goods-producing industries. From 1961 to 1972, the average annual rate of increase in output per person employed was 2.1% in the commercial service sector and 4.7% in the commercial goods sector. During the same period, output per man-hour increased 3.1% and 5.4%, respectively. In manufacturing, from 1961 to 1972 output per person rose 4.1% annually while the growth in output per man-hour was 4.3%.

Unit labour cost for commercial industries increased at an average annual rate of 1.0% for the period 1961-66 and 3.7% for 1966-72.

21.3 Price indexes

The price indexes provided here are classified into price indexes of goods and services paid by consumers at the retail level; manufacturers' selling price indexes of goods and services; purchase price indexes of selected capital goods; farm input price indexes; and securities price indexes.

21.3.1 Retail price indexes

This Section describes price indexes currently available for commodities purchased by consumers at the retail level.

Consumer price index. The consumer price index measures the movement from month to month in retail prices of goods and services bought by a representative cross-section of the Canadian urban population. It is a base-weighted index, measuring the effect of changing prices on the cost of purchasing a fixed basket. The basket on which the index was based from 1961 to April 1973 relates to 1957 family spending patterns. Since April 1973, the index has been based on expenditures in 1967 of families ranging in size from two to six persons, with annual incomes of \$4,000 to \$12,000, living in urban centres with metropolitan populations exceeding 30,000.

The movement of the consumer price index (CPI) during the period 1961-72 is described in previous editions of the *Canada Year Book*. Between 1972 and 1973 the rate of change in the CPI, as measured by calculating the difference between annual average indexes, accelerated to 7.6% compared to an average year-to-year change in the previous five years of 3.9%. On the basis of this movement in consumer prices the purchasing power of the consumer dollar declined from 72 cents in 1972 to 66 cents in 1973 relative to \$1.00 in 1961.

The acceleration in the rate of price change was mainly attributable to a sharp rise in the rate of advance of food prices although notable price increases were also recorded for housing and clothing. Food prices, rising over 14% between 1972 and 1973, were responsible for almost half of the rise in the CPI between these two years. The major contributors to this largest year-to-year food price increase since 1951 were meat, fresh produce and eggs. Table 21.15 presents indexes for major components and the all-item index for the period 1964 to 1973. In this classification, the index items are grouped according to broad categories of use by the consumer. Items in the index may also be grouped by type of commodity and service, which permits another view of the incidence of price change (see Table 21.16). Full details are contained in Statistics Canada occasional publication *The consumer price index for Canada (1961=100). Revision based on 1967 expenditures*, Catalogue No. 62-539. A notable acceleration was recorded in the price of goods between 1972 and 1973 when prices rose 8.8% in contrast to a rise of 3.1%, on average, for the previous five year-to-year periods. This acceleration was mainly due to the increase in food prices. Non-durable goods other than food rose 5.3% and the price of semi-durable and durable goods advanced 6.5% and 1.4%, respectively, between 1972 and 1973. Service prices, which have risen more sharply than commodity prices in other years, recorded an increase of 6.1%. Though this advance was greater than recent annual average changes for services it was nonetheless smaller than the advance in commodity prices between 1972 and 1973.

Table 21.17 presents regional consumer prices for 12 cities or city combinations. These indexes measure percentage changes in retail prices over time, in each city or city combination, of a fixed basket of goods and services representing the level of consumption of a particular group of families. In order to place movements in Canadian retail prices in perspective they

may be compared with price changes occurring elsewhere in the world. This is done in Table 21.18 which indicates the percentage changes over the previous year in the consumer price index for each country specified. For purposes of this comparison, countries are listed alphabetically, by region.

Intercity consumer price indexes. Table 21.19 provides indexes that compare levels of prices among 11 major Canadian cities. These indexes express prices in each city as a percentage of the combined cities average which equals 100. The comparisons shown are those in effect as of December 1973 for four commodity groupings and May 1971 for the remaining three categories. The selected commodity groupings in the Table make up about three quarters of the average urban consumer's budget. For technical reasons, shelter costs (for both rented and owned facilities) and restaurant meals, are not included in the comparisons.

The retail prices used for the intercity comparisons are largely those routinely collected in each city for the production of the consumer price index with the exception of the food for home consumption component which contains data from a special survey undertaken in May 1971. Comparability between cities was achieved, as far as possible, by matching quotations for similar qualities of goods and services and types of retail outlets. Since comparisons relate to prices that include sales and excise taxes, variations between provinces in the scale of such taxes imposed on a wide range of non-food commodities can be of significance in explaining intercity price differentials.

21.3.2 Industrial commodity price indexes

These relate to sales and purchases, at levels other than retail, of raw materials, semi-processed goods and manufactured products. They are constructed in two ways: on an industry basis, in which the indexes are prepared for individual industries and aggregated for groups of industries; and on a commodity basis, in which indexes are prepared for individual commodities and aggregated for groups of commodities. "Industry selling price indexes" for manufacturing industries are the principal industry-classified indexes available in Canada. The "general wholesale index" is a commodity-classified index.

Industry selling price indexes (manufacturing). Indexes of the selling prices of some 100 individual industries classified to manufacturing in the Standard Industrial Classification are produced and published monthly. In addition, indexes are available for major groups of manufacturing industries and, on a gross-weighted basis, for all manufacturing.

The indexes measure the change through time of prices received by manufacturers for their products. Prices reflected in the index are f.o.b. manufacturing establishment, excluding taxes levied on manufacturers' sales. The items and weights in the current indexes are based on manufacturers' shipments in 1961. The composite gross weighted index for manufacturing is presented in Table 21.20, for the years 1962-73.

The general wholesale index includes mainly manufacturers' prices but also incorporates prices of wholesalers, assemblers of primary products, and agents and operators of other types of commercial enterprises which trade in commodities of a type, or in quantities, characteristic of primary marketing functions. Prices are grouped according to a commodity classification scheme based on chief component material similarities. Indexes classified according to degree of manufacture are also available. In Table 21.21, the general wholesale index is presented for the period 1950-73. This index is used as a conventional summary figure against which to observe the behaviour of particular price groups such as farm products, raw materials and building materials, for which separate price indexes have been constructed.

World wholesale price indexes. Comparisons of Canadian wholesale price indexes with those of other countries for the years 1971-73 are given in Table 21.22.

21.3.3 Price indexes of selected capital goods

This Section covers price indexes currently available for residential and non-residential building construction, engineering construction, and machinery and equipment purchased by the construction and forestry industries.

Residential and non-residential building construction indexes. Price indexes of residential and non-residential building construction are base-weighted indexes of materials and labour. They are presented in Table 21.23 for the years 1964-73.

Since the building material prices in these indexes reflect price movements on purchasers'

markets they contain sales tax changes. The wage rate component, from 1971 forward, is derived mainly from surveys of agreements conducted by the Canadian Construction Association for construction trades in various centres; these are base rates which reflect union scale or collective agreements. The combined indexes of materials and wage rates do not necessarily reflect changes in the price of construction output since they do not take account of changes in profit margins or in productivity but instead concentrate only on the prices of the inputs.

Highway construction indexes. These relate to prices paid by provincial governments in contracts awarded for highway construction. They are base-weighted indexes and measure the effect of price change on the cost of specified new highway construction projects represented by contracts of approximately \$50,000 or more awarded by provincial governments. Indexes for the period 1963-72 are given in Table 21.24.

Prices contained in the index are for units of construction work put in place, such as a cubic yard of earth excavation or a ton of bituminous hot-mix paving. Also included are prices of some materials, such as culvert pipe, usually supplied to the contractor by the highways department. *Prices and price indexes* (Catalogue No. 62-002) for December 1967 contains details of the problems of estimating price change for highway construction.

Electrical utility construction indexes. The price indexes of electrical utility construction, which include those of distribution systems, transmission lines, transformer stations and hydro-electric generating stations, give an estimate of the impact of price change on the cost of materials, labour and equipment used in constructing and equipping electrical utilities. The index provides an estimate of how much more, or less, it would cost to reproduce the base-period program of construction in another period using the same construction technology and assuming similar rates of profit and productivity.

Price indexes for the years 1964-73 are presented in Table 21.25. Prices used in the indexes are, for the most part, selling prices reported monthly by manufacturers for materials or equipment, including federal sales tax changes. Until December 1964, wage rate data were supplied by the Department of Labour and represented minimum hourly rates paid to construction workers employed on federal government contracts in major cities. In 1965 basic union wage rates reported by major utilities and some contractors were incorporated into the index. An estimate of wage rate changes for urban own-account and contract electrical utility construction is included.

Price indexes of machinery and equipment. Table 21.26 shows base-weighted price indexes of machinery and equipment purchased by the construction and by the forestry industries. Prices used for the indexes are, for the most part, selling prices reported monthly by manufacturers, although in some cases distributors' prices are used. Prices of imported machinery and equipment are included in the index, represented either by commodity price indexes of the US Bureau of Labor Statistics or by prices collected directly from foreign manufacturers. All prices have been adjusted as relevant to include duty, exchange and federal sales tax.

21.3.4 Farm input price indexes

Farm input price indexes measure, through time, changes in prices of commodities and services used as inputs into the agriculture industry. The weights for the indexes are based on the 1958 Farm Income and Expenditure Survey. The time base is 1961=100. Indexes for 41 series are published quarterly for eastern, western and total Canada. Annual averages for the total index are provided from 1964 to 1973 in Table 21.27.

21.3.5 Security price indexes

Security price indexes measure, through time, the effect of price change on the value of a portfolio consisting of high quality as opposed to more speculative stocks. The portfolio represents stocks of Canadian companies listed on the major Canadian stock exchanges. In the case of the mining index, eligible issues are for producing mines only. The indexes in Table 21.28 express current prices as a percentage of prices in 1961.

21.4 Balance of international payments

The Canadian balance of international payments summarizes transactions between residents of Canada and those of the rest of the world. Current account transactions, which measure the flow of goods and services between Canada and other countries are included, with

minor adjustments, as a component of gross national expenditure. Capital account transactions between residents and non-residents are included in the financial flow accounts. The main current account aggregates are summarized in Tables 21.29 and 21.30 while a more detailed breakdown of the complete balance of international payments for 1972-73 is presented in Table 21.31.

Summary 1973. The international perspective in which the Canadian balance of payments should be viewed in 1973 was extremely volatile and dominated by developments in the energy field which may have pervasive effects in the future on the level of economic activity throughout the world, international trade and international monetary reform.

Early in 1973 the US dollar came under extreme pressure in foreign exchange markets. To alleviate this situation the US authorities agreed to raise the price of gold 10% to US\$42.22 an ounce; this had an immediate effect on the exchange value of the US dollar, even though formal action to implement the decision was not completed until October 1973. Further speculation against the US dollar continued, however, forcing a closing of exchange markets in Europe and a change in the *modus operandi* of the joint float of major continental European currencies. The Canadian dollar maintained its relationship against the US dollar and therefore declined with the latter in relation to European currencies. Much of this depreciation was recovered later in the year as the US current account improved significantly.

Economic conditions in most of the developed nations were buoyant in 1973 although inflationary tendencies were apparent everywhere. Prices of food and raw materials were particularly susceptible to increases — a factor which, on balance, assisted significantly in the rise in the Canadian trade surplus.

Security of energy supplies also became more of an issue in 1973. In March, the United States relaxed its ceiling on imports of crude petroleum as gasoline shortages became evident in that country. In Canada a licensing system for exports of crude petroleum was introduced in February and authorized levels were reduced below those requested by exporting companies. This was followed in September by the institution of a two-price system for Canadian oil, as a tax of 40 cents a barrel was levied in October and raised to \$1.90 a barrel in December. This tax was linked to international oil prices and in particular those paid for imports into eastern Canada.

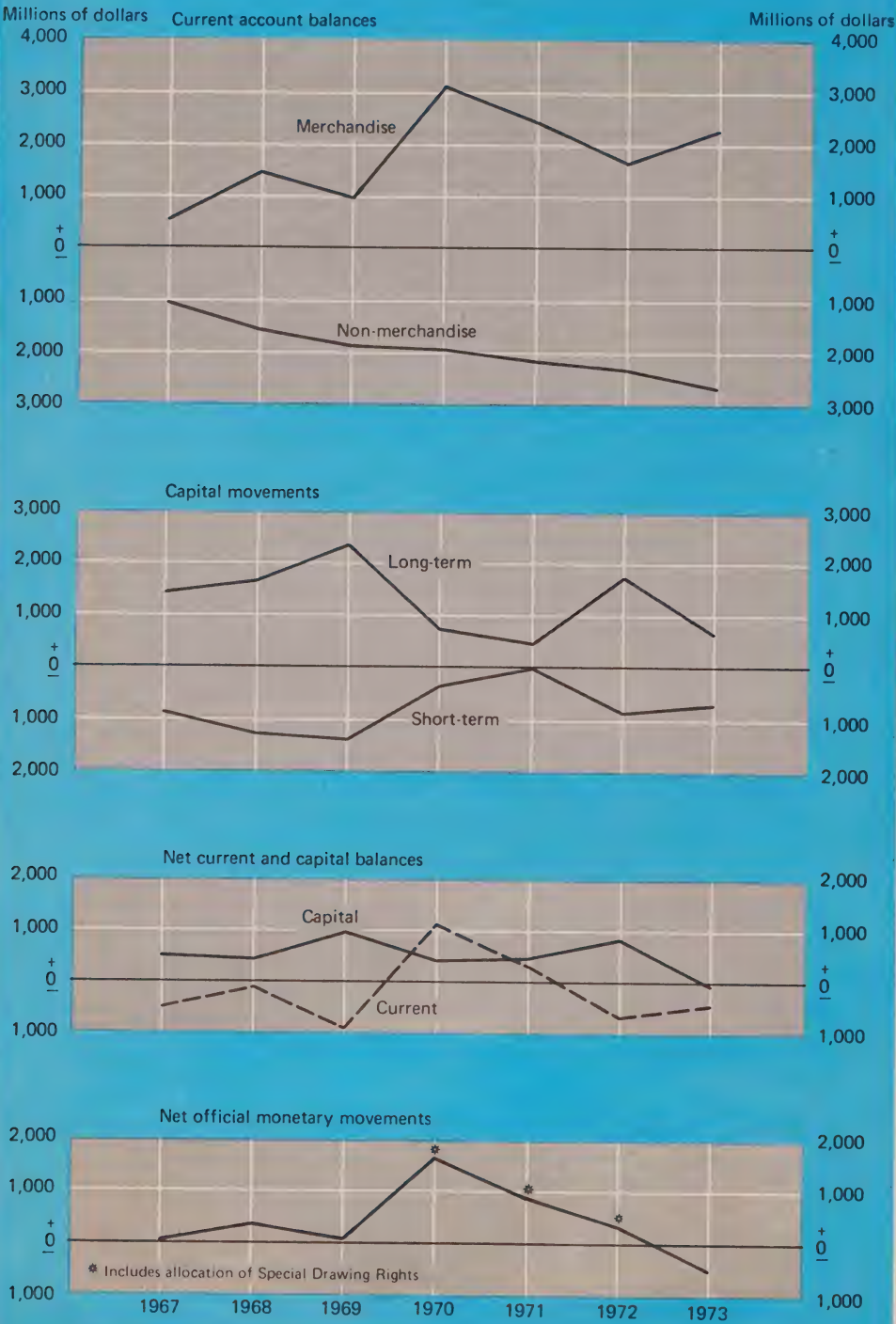
These developments were aggravated by the October war in the Middle East which was followed by a reduction in oil shipments and further price increases introduced by all major exporters. The consequences of this major change in availability and price of a product on which modern industry depends will become more apparent in the future. Apart from questions relating to the level of economic activity, there will obviously be major balance of payments adjustment problems for non-oil-producing countries matched by disequilibria in capital accounts as the rapidly increasing foreign exchange reserves of oil producing countries are recycled.

21.4.1 Current account

During 1973 current account transactions with non-residents produced a deficit of \$425 million. This marked a 35% decline from the \$655 million deficit of a year earlier. The contraction in the deficit was attributable to merchandise transactions, on which the surplus widened by \$586 million to \$2,231 million, despite a major reduction in Canada's bilateral trade surplus with the United States. Merchandise exports increased to \$25,500 million in 1973, for a gain of 26% over 1972, the largest growth in any year since 1951. Major price increases for some of Canada's most important export commodities accounted for more than one half of the total rise in the value of Canadian exports. There have been substantial gains in shipments to most of Canada's principal markets, with the more notable being recorded to the United States, Japan, United Kingdom, the Federal Republic of Germany, Italy and Belgium — Luxembourg. The United States market received about 68% of total shipments in 1973 and contributed the same amount to the increase in the value of Canadian exports. On a commodity basis, the largest increases in exports were recorded in the fabricated and crude materials sections. Apart from automotive products, which recorded the largest absolute gain, other important increases were recorded for shipments of crude petroleum, lumber, wheat, crude copper, wood pulp, newsprint, petroleum and coal products, copper and alloys, iron ores and rapeseed.

High economic growth as reflected by a 7.1% increase in gross national product in real terms has meant a continuing strong demand for imports, which increased by 25% to \$23,269

Balance of international payments, 1967-73



million. While the value of merchandise imports rose at about the same rate as exports, the rise in imports in terms of volume was higher than that shown by exports. The rise in import prices, however, was also substantial, especially in the food and crude materials sections.

Major currency realignments, vis-à-vis overseas currencies during the first half of the year and higher costs for petroleum in the last three months contributed to the rising price of imports into Canada. The largest increases in imports were recorded from the United States, Venezuela, the Federal Republic of Germany, France, Iran and the United Kingdom. The major commodities accounting for the expansion in imports included automotive products, crude petroleum, aircraft, live animals, telecommunications and related equipment, other transportation equipment, meat, and electronic computers.

The deficit on non-merchandise transactions continued to rise in 1973, and, at \$2,656 million, was \$356 million greater than in 1972. The net balances on all the service items worsened. The largest change occurred on the interest and dividends account, as a 17% increase in payments set against a 4% growth in receipts resulted in a \$270 million expansion in the deficit to \$1,344 million. More than two thirds of the growth in this deficit was due to net dividend payments. The deficits on travel, freight and shipping, and "other services" increased by \$62 million, \$44 million and \$15 million, respectively. Partially offsetting the larger net payments on services, there was a 24% increase in the surplus on unilateral transfers, to \$360 million. This was largely due to an increase in inheritances and immigrant receipts.

21.4.2 Capital movements

Capital movements between Canada and other countries in 1973 resulted in a net capital outflow of \$42 million, a change of \$916 million from net capital inflows of \$874 million in 1972. This movement together with a current account deficit of \$425 million, resulted in a decrease in Canadian official monetary assets of \$467 million.

The net capital inflow in long-term forms for direct investment in new and existing foreign controlled and partially controlled enterprises in Canada amounted to \$720 million during 1973, little changed from net inflows of \$715 million during 1972. During the year the total flows, both inward and outward, included a number of significant non-recurring transactions reflecting the takeover by Canadians of assets formerly owned by non-residents, and special financial restructuring programs.

Net capital outflows for Canadian direct investment abroad increased during the year to \$590 million from \$385 million during 1972.

Transactions between Canada and the rest of the world in all long-term portfolio securities during 1973 led to a net capital inflow of \$749 million, a reduction of \$947 million from a net inflow of \$1,696 million during 1972. The reduced net inflow was due primarily to a \$403 million reduction in sales of new Canadian securities abroad, a \$262 million reduction in net inflows from trading in outstanding Canadian bonds, a \$112 million increase in retirements of Canadian securities held abroad, and a \$277 million reduction in net sales of outstanding foreign securities.

Development assistance outflows in the form of soft loans and advances from the Canadian government to developing countries and international development agencies totalled \$249 million in 1973. Of the total, 60% went to Commonwealth countries, principally in Asia and Africa. Loans and subscriptions to international development agencies during 1973 amounted to \$93 million, down \$13 million from 1972 levels.

The soft loans program to assist developing countries was introduced by the Canadian government in the mid-sixties. The first contractual repayments under the initial loans became due during 1973. In the first quarter there was a repayment of \$5 million followed by a much smaller repayment in the third quarter. These repayments, together with those on outstanding postwar loans to European countries amounted to \$42 million during the year, \$30 million of which were made in the fourth quarter.

Transactions during 1973 arising from the financing of medium-and long-term export credits extended directly or indirectly at the risk of the Canadian government led to a net capital outflow of \$185 million, down \$66 million from the previous year. Of the total, \$77 million represented net credits extended for the purchase of wheat, down from \$94 million in 1972. The People's Republic of China accounted for more than one half of total credit transactions for wheat during the year. Net outflows for financing non-wheat exports amounted to \$108 million, a reduction of \$49 million from the previous year.

The remaining capital movements in long-term forms, which include bank and other long-term loans, mortgage investments and movements of insurance funds led to a net inflow of \$171 million, down from a 1972 net inflow of \$198 million.

Transactions of the Canadian chartered banks in foreign currency assets and liabilities with non-residents (including foreign branches) resulted in a net outflow of \$343 million, a swing of \$980 million from a net inflow of \$637 million during 1972. Changes in non-bank holdings of foreign currencies led to a net outflow for the year of \$214 million, an increase of \$43 million from a net outflow of \$171 million during 1972.

Transactions in non-resident holdings of Canadian dollar deposits led to a net inflow of \$159 million, up \$23 million from 1972. An increase in holdings by international agencies of government demand liabilities in the form of non-interest bearing, non-negotiable notes, led to a net inflow of \$63 million during 1973, up from \$27 million during the previous year. These notes are issued as part of Government of Canada loans and subscriptions.

In 1973 trading in money market instruments, including treasury bills, led to a net capital inflow of \$115 million, a \$278 million change from a 1972 net outflow of \$163 million. Gross transactions during the year were almost double those of 1972. Transactions in Canadian money market paper are almost exclusively with the United States. A major factor in increased non-resident holdings and activity in Canadian short-term paper was the very substantial covered interest rate differential between Canada and the United States in favour of net sales of Canadian instruments which prevailed during the year, particularly during the last three quarters. The net flows are also influenced by domestic monetary considerations and during certain periods when there is a large amount of overnight banking of paper inventories and buy-back selling, the recorded movements can be quite erratic.

Transactions in other finance company obligations led to a net inflow of \$17 million, a swing of \$44 million from a 1972 net outflow of \$27 million.

All other short-term capital transactions resulted in a net capital outflow of \$498 million. This account includes the balancing item representing the difference between recorded measures of current, capital and reserve movements.

21.4.3 Official international monetary assets and liabilities

Canada's net official monetary assets totalled US\$5,768 million at December 31, 1973, a decrease of US\$282 million in the year. Balance of payments transactions led to a fall in reserves of US\$467 million which was partly offset by a US\$185 million revaluation of the stock of Canada's gold-based assets in October. (The increase in the price of monetary gold from US\$38 million to US\$42.22 per ounce although announced and made effective in February was not officially implemented until October.) These assets include gold, Special Drawing Rights and Canada's reserve position in the International Monetary Fund. Expressed in Canadian dollars, the net flow of funds to augment Canada's official reserves was \$467 million.

21.5 Canada's international investment position

Canada has been among the world's largest importers of capital as the demand for real resources from abroad has been associated with a pattern of consistent current account deficits and net inflows of capital. This pattern was, however, interrupted in 1970 and 1971 by current account surpluses. In addition to capital inflows, which are a counterpart to net deficits on the current account, undistributed earnings of foreign owned branches and subsidiaries have also been a significant factor. These two sources of funds have helped finance capital formation in Canada and contributed to the rapid growth in production, earnings and employment.

In 1970, the latest year for which complete data are available, Canada's balance of international indebtedness rose by \$400 million to a total of \$28.5 billion (Table 21.32), the smallest absolute increase recorded for any year since 1946. The balance of international indebtedness is a phrase generally accepted in balance of payments terminology to include equity investments as well as contractual borrowings. In 1970 this figure was made up of Canada's total external liabilities of about \$52.1 billion, of which some \$46.9 billion was in the form of long-term claims, and total Canadian assets abroad of about \$23.6 billion, of which slightly less than half was in long-term form.

21.5.1 External liabilities

At the end of 1970, Canada's gross external liabilities amounted to \$52.1 billion with non-resident-owned long-term investments in Canada reaching a book value of \$44 billion (Table

21.33). Of this amount some \$26.4 billion was in the form of direct investment in Canadian enterprises. Investments of a portfolio nature, although smaller, were also substantial.

Dependence on external sources of capital for financing in periods of heavy investment activity has been characteristic of Canadian development. During the exceptional growth period that occurred before World War I, non-resident investment was very high and the main source of that investment was the United Kingdom. However, during the first part of the interwar period, the United States became the principal source of external capital and by 1926 the portion of Canada's international debt owned in the United States exceeded that owned in the United Kingdom. With some interruption during the 1930s, US investment in Canada continued to increase, particularly after 1947 when a period of intense activity in the petroleum industry got under way. At \$35.0 billion, US long-term investments in 1970 represented about 79.3% of all non-resident long-term investment in Canada, the main component being direct investment of some \$21.4 billion or 61.3% of total US long-term investment in Canada.

Long-term investments in Canada by residents of the United Kingdom totalled \$4.0 billion at the end of 1970. As a proportion of total non-resident investments in Canada the British share was about 9%, well below their 36% share at the end of 1939 before wartime repatriations. After reaching a low point in 1948 the value of UK investments in Canada increased each year to 1962, declined slightly in 1963, partly as a result of Canadian repatriation of investments in railways and further provincial takeover of other utilities, then increased again in subsequent years.

Long-term investments by residents of countries other than the United States and the United Kingdom amounted to \$5.1 billion at the end of 1970. This investment was over twice as large as a decade earlier, outpacing both the US and the UK in terms of growth. It represented over 11.5% of total foreign long-term investment in Canada in 1970 as compared to just under 10% in 1968. Of the \$2.5 billion direct investment in 1970 by this group of countries, about \$2.0 billion, or 80%, originated in Europe, mainly the Netherlands, France and Switzerland.

21.5.2 Foreign investment in Canadian industry

Foreign investment in Canadian industry is measured both in terms of the absolute dollar value of foreign capital in each industry and the percentage of capital controlled by non-residents in each industry. In 1970, 53% of capital employed in Canadian manufacturing was owned by non-residents, up one percentage point from 1967; the percentage of capital subject to foreign control was 61%, up three percentage points from 1967. These data are based on information gathered for enterprises (groups of commonly controlled companies). For data on Canadian and foreign control in the manufacturing industries based on a distribution of individual establishments or plants, see Chapter 17, Section 17.2 where the differences between types of data on national ownership are discussed briefly.

In the petroleum and natural gas industry, non-resident ownership and control amounted to 61% and 76%, respectively, compared with 62% and 74%, respectively, in 1967. In other mining and smelting at the end of 1970 non-resident ownership and control ratios were 59% and 70%, respectively, in comparison to 61% and 65% for 1967. From 1967 to 1970 total capital employed in these industries rose by some \$8.5 billion to \$43.9 billion. The percentage of capital owned by non-residents rose by less than one percentage point over this period whereas the percentage of capital controlled by non-residents rose in excess of three percentage points.

Canadian capital continued to play a predominant role in the financing of several areas of business such as merchandising, railways and other public utilities. Over the broad spectrum of business activity including manufacturing, petroleum, mining, merchandising, construction and all utilities the proportion of non-resident ownership remained constant at 35% from 1967 to 1970 while the share of capital invested in Canadian industries that was subject to foreign control rose by one percentage point to 36%. From 1948 to 1967 foreign ownership rose by about three percentage points while foreign control rose by approximately 10 percentage points.

21.5.3 Canadian assets abroad

Although there has been considerable growth in non-resident investment in Canada and in the balance of Canadian indebtedness to non-residents, Canadian assets abroad have risen

at a faster rate than Canada's external liabilities (Table 21.34). They now equal a larger proportion of liabilities abroad than was the case before World War II. As a proportion of Canada's liabilities they rose from about one fifth in 1926 to over two fifths in 1970. This development was accompanied by a change in the structure of Canada's assets abroad. The share of private long-term investment (including direct, portfolio, and miscellaneous investment) in Canada's foreign assets declined from about 70% of the total in 1926 to about 45% in 1970. Assets abroad of the Government of Canada which were minor in 1926 accounted for nearly one third of the total in 1970. In fact, in the period immediately after World War II, the government proportion of Canada's foreign assets was even higher and in some years accounted for as much as two thirds of the total. Various short-term holdings other than net official monetary assets accounted for the balance of Canada's foreign assets. Their share of total assets has varied over the years; from about one third of the total in 1926, the proportion became negligible by the end of World War II. In recent years they comprised about one fifth of the total. Long-term assets, both private and government, have generally tended to be greater than short-term assets.

Canadian long-term investment abroad has increased over twelvefold from \$926 million in 1926 to \$11,700 million in 1970. The bulk of Canadian long-term investment abroad is in the form of private capital, especially in the direct investment sector. The remainder consists mostly of government loans and advances and subscriptions to international investment agencies. Geographically, long-term investment in the United States of \$5,902 million made up slightly more than half of Canada's long-term investment abroad in 1970. About three fifths of total private investment was in that country. Outstanding Government of Canada credit provided under authority of the United Kingdom Financing Agreement Act, 1946, was the major element in the \$1,751 million of Canadian assets in the United Kingdom. In the decade of the 1960s the share of direct investment in Canada's assets in the United Kingdom increased and now accounts for over one third of the total. In other Commonwealth countries, direct investment has always been the predominant form of Canada's assets. Although at the end of 1970 direct investment accounted for over 70% of Canada's assets in these countries, its share was somewhat lower than in most of the previous years due to the expansion of Government of Canada credits made under the new development or "soft" loan program. In the 1960s direct investment emerged as the most important form of Canada's assets in all other countries and accounted for over one half of the total in those countries. Export credits made directly or indirectly at the risk of the Government of Canada also continued to be an important element in Canada's assets in this group of countries.

Canadian short-term assets, consisting of net official monetary assets, other Canadian short-term holdings of exchange and short-term receivables, have increased more than fourfold since the end of World War II to account for over two fifths of total assets in 1970.

21.5.4 1973 estimates

Preliminary estimates produced on the basis of available data indicate that Canada's balance of international indebtedness reached a book value of more than \$32.5 billion by the end of 1973. Long-term foreign investment amounted to some \$53 billion and, together with other long-term liabilities, including non-resident equity in Canada's assets abroad, brought the total of long-term liabilities to over \$56.5 billion. Short-term claims increased the total of Canada's external liabilities to about \$63 billion. Canadian long-term investment abroad was slightly in excess of \$14.5 billion at the end of 1973, while short-term claims on non-residents (including resident holdings of foreign currencies and net official monetary assets) brought the total of Canada's external assets to over \$30 billion.

Projected control ratios for 1973, based on 1970 data adjusted to reflect changes in control of major enterprises, indicate a decline in foreign-controlled capital in non-financial industries of two percentage points since 1970. At the end of 1973, foreign-controlled enterprises accounted for 34% of total capital employed in these industries. Major shifts occurred in the manufacturing and mining and smelting industries as increasing Canadian share ownership of certain large enterprises resulted in their reclassification to Canadian control for statistical purposes. As a result, non-resident control decreased by three and 16 percentage points respectively, to 44% of the total in manufacturing and 54% in mining and smelting. Some change was also registered in the petroleum and natural gas industry, where foreign-controlled capital increased by one percentage point to 77% of the total.

21.6 Financial flow accounts

Against a background of rapid expansion of real economic activity and an accelerated pace of inflation, a record volume of funds was channelled through Canadian capital markets in 1973. Total borrowing by non-financial sectors of the economy rose from approximately \$17 billion in 1972 to \$22 billion in 1973. (Non-financial sectors borrow through conventional credit market instruments: consumer credit, bank loans, other loans, short-term debt instruments, mortgages, bonds, stocks and foreign securities.) There was increased reliance on short-term forms of financing by the non-financial business sector in 1973 and short-term rates of interest rose dramatically over the year. Short-term rates, however, did not reach the high levels attained abroad. In contrast to the pressure on the short-term instruments, the volume of bond financing was substantially below the flow for 1972 and long-term rates of interest posted a modest rise in 1973. By the third quarter of the year, the yield curve was twisted with many short-term rates of interest exceeding long-term rates.

Following three years of an expansionary monetary policy initiated in 1970, the authorities moved progressively toward a more restrictive posture in 1973. This less expansionary stance is not immediately recognizable from the growth rates posted by the various measures of the money supply. While money, narrowly defined, grew at a rate of 11.2% in 1973, which was down from the elevated rate of 14.7% in 1972, this still represented a rapid rate of expansion viewed from a longer-run historical perspective. The money supply, broadly defined, continued to rise rapidly in 1973, the rate of expansion of close to 16% was similar to the percentage rate of increase a year earlier. The rapid expansion of the banking system in 1973 appears less of an anomaly and can be placed in a better perspective if the following points are taken into consideration: a substantial increase in the total demand for funds by non-financial borrowers; an increased relative emphasis on short-term forms of financing (particularly loans) away from long-term forms; the rapid rise in short-term interest rates that occurred as the short-term capital market came under increased demand pressure; and the increased tendency of lenders and borrowers to channel credit through the deposit-accepting institution.

During 1973, the Bank of Canada revised the bank rate upwards five times from a low of 4.75% at the beginning of the year to 7.25% by mid-September. With loans and mortgages expanding at a faster rate than total banking assets, the liquid asset ratios of the chartered banks fell progressively over the year and by the end of the year, were at historically low levels.

Some perspective on the magnitude of borrowing in 1973 can be gained by comparing it to the gross national product (GNP). As a percentage of GNP, total borrowing rose markedly in 1971 to approximately 17%. This high proportion was maintained in 1972 and rose somewhat in 1973 to 18.7%. A marked shift in emphasis to private sector borrowing away from public sector borrowing occurred in 1972 and accelerated in 1973. Borrowing by non-financial sectors was concentrated in mortgages, consumer finance and bank loans in 1973.

The substantial increase in mortgage liabilities reflected the continued expansion in residential construction and the sharp increases in prices of new and existing houses and land. Mortgage borrowing as a percentage of total borrowing increased from about 28% in 1972 to over 31% in 1973. In contrast to the situation in the United States, where the housing sector fell off during the year, residential construction activity increased in Canada during 1973 and the flow of funds into the mortgage market was accelerated. Referring to the mortgage component of the annual financial flows matrix for 1973 (Table 21.35), it can be seen that the bulk of the increase was financed by chartered banks and other lending institutions such as trust and mortgage loan companies. This increased pressure on the mortgage market was accompanied by some increase in mortgage lending rates. By year's end the rate applicable to conventional mortgages hovered about 10%, up from slightly over 9% in the early months of the year.

A broadly based expansion in expenditures on consumer durables was mirrored in the financial system by a large increase in the amount of consumer credit outstanding, which reached a level of approximately \$17.7 billion by the end of 1973. The flow of consumer credit was augmented by 34% to \$2.8 billion. The greater part of this increase was financed by the chartered banks, which accounted for over 60% of the flow. Credit unions and caisses populaires and sales finance and consumer loan companies were also important suppliers of additional consumer credit in 1973.

As increased pressure was placed on productive capacity, the pace of business investment spending picked up sharply in 1973. Expenditures on plant and equipment by the business sec-

tor rose in real and nominal terms by 12% and 18%, respectively. A large increase in internally generated funds was available to finance business capital formation as the recovery in profits accelerated into 1973. Total borrowing by the private non-financial business sector, however, was well in excess of its net financial requirements and the sector exhibited a large increase in financial assets, particularly in the form of short-term claims and instruments.

The government sector as a whole assumed reduced importance as a major borrower of funds as revenues grew faster than expenditures in 1973. The falling off in government borrowing activity occurred primarily at the federal level. Cash requirements of the federal government were met by a reduction in Canadian dollar cash balances, ordinary foreign exchange transactions and temporary foreign exchange swap transactions between the Bank of Canada and the Exchange Fund Account. There was a slight decline in the amount of federal issues outstanding. The provincial government sector also placed less demand pressure on Canadian capital markets in 1973 compared to the situation a year earlier. Net borrowing by this sector amounted to \$302 million in 1973, down from \$726 million in 1972. Borrowing by provincial governments, down sharply from 1972, was highly concentrated in bonds. Relatively less importance was placed on foreign capital markets as a source of bond financing. Local governments, in contrast to the federal and provincial governments, exhibited increased borrowing requirements in 1973. A tendency to substitute bank financing for bond financing occurred at the municipal government level in 1973.

Net lending by non-residents to Canada amounted to \$425 million in 1973, down from \$655 million a year earlier. On a net basis (credits offset against debits), the rest of the world accumulated long-term financial claims on Canada and incurred short-term liabilities, as the pattern of international interest rate differentials favoured a long-term capital inflow to Canada and a short-term capital outflow. Net capital movements (excluding official reserves) led to an increase of \$42 million in Canada's claims on the rest of the world. Net capital movements typically result in a capital inflow to Canada and the net outflow that occurred in 1973 is the first net outflow on an annual basis since 1952. On an official settlements basis, the surplus of the rest of the world with Canada was \$467 million and this was met by an equivalent reduction in Canada's official international reserves.

A summary matrix of the financial flow system is presented in Table 21.35. More detailed data for individual sectors and summary matrices are available in the quarterly publication *Financial flow accounts* (Catalogue No. 13-002).

Sources

- 21.1 Gross National Product Division, System of National Accounts (Current) Branch, Statistics Canada.
- 21.2.1 - 21.2.2 Industry Product Division, System of National Accounts (Current) Branch, Statistics Canada.
- 21.2.3 Input-Output Division, System of National Accounts (Structural) Branch, Statistics Canada.
- 21.3 Prices Division, General Statistics Branch, Statistics Canada.
- 21.4 - 21.5 Balance of Payments Division, System of National Accounts (Current) Branch, Statistics Canada.
- 21.6 Financial Flows and Multinational Enterprise Division, System of National Accounts (Current) Branch, Statistics Canada.

Tables

.. not available	e estimate
... not appropriate or not applicable	p preliminary
— nil or zero	r revised
-- too small to be expressed	billion = '000,000,000
certain tables may not add due to rounding	

21.1 Gross national product in current and constant (1961) dollars, and index of gross national expenditure in constant (1961) dollars, 1949-73

Year	Gross national product		Index of gross national expenditure in constant (1961) dollars (1961 = 100)
	Millions of current dollars	Millions of constant (1961) dollars	
1949	16,800	22,735	57.3
1950	18,491	24,451	61.7
1951	21,640	25,673	64.8
1952	24,588	27,968	70.5
1953	25,833	29,408	74.2
1954	25,918	29,047	73.3
1955	28,528	31,788	80.2
1956	32,058	34,474	87.0
1957	33,513	35,283	89.0
1958	34,777	36,098	91.1
1959	36,846	37,470	94.5
1960	38,359	38,553	97.2
1961	39,646	39,646	100.0
1962	42,927	42,349	106.8
1963	45,978	44,531	112.3
1964	50,280	47,519	119.9
1965	55,364	50,685	127.8
1966	61,828	54,207	136.7
1967	66,409	56,016	141.3
1968	72,586	59,292	149.6
1969	79,815	62,448	157.5
1970 ^r	85,685	64,014	161.5
1971 ^r	93,307	67,585	170.5
1972 ^r	103,493	71,515	180.4
1973	118,902	76,345	192.6

21.2 National income and gross national product, by component, 1970-73 (million dollars)

Item	1970 ^r	1971 ^r	1972 ^r	1973
Wages, salaries and supplementary labour income	46,706	51,342	56,976	64,108
Military pay and allowances	914	908	979	1,039
Corporation profits before taxes ¹	7,699	8,692	10,522	14,275
Deduct: dividends paid to non-residents ²	-952	-1,079	-1,032	-1,246
Interest, and miscellaneous investment income ³	3,428	3,810	4,370	5,180
Accrued net income of farm operators from farm production ⁴	1,211	1,464	1,572	3,014
Net income of non-farm unincorporated business, incl. rent ⁵	5,424	5,861	6,359	6,803
Inventory valuation adjustment	-195	-671	-1,000	-2,418
Net national income at factor cost	64,235	70,327	78,746	90,755
Indirect taxes less subsidies	11,299	12,308	13,796	15,357
Capital consumption allowances and miscellaneous valuation adjustments	9,806	10,589	11,626	13,057
Residual error of estimate	345	83	-675	-267
Gross national product at market prices	85,685	93,307	103,493	118,902

¹Excludes profits of government business enterprises.

²Includes withholding tax.

³Includes profits (net of losses) of government business enterprises and other government investment income.

⁴Includes value of physical change in farm inventories and accrued earnings of farm operators arising out of operations of the Canadian Wheat Board.

⁵Includes net income of independent professional practitioners and imputed net rent on owner-occupied dwellings.

21.3 Gross national expenditure, 1970-73 (million dollars)

Item	1970 ^r	1971 ^r	1972 ^r	1973
Personal expenditure on consumer goods and services	50,327	54,266	60,337	69,094
Government current expenditure on goods and services	16,630	18,415	20,395	22,779
Gross fixed capital formation	18,015	20,394	22,508	26,502
Government	3,173	3,754	3,968	4,395
Business	14,842	16,640	18,540	22,107
Residential construction	3,500	4,410	5,278	6,508
Non-residential construction	5,385	5,952	6,204	7,224
Machinery and equipment	5,957	6,278	7,058	8,375
Value of physical change in inventories	105	283	523	1,044
Government	-13	-40	16	-15
Business				
Non-farm	255	317	764	923
Farm and grain in commercial channels	-137	6	-257	136
Exports of goods and services	21,167	22,271	24,608	30,491
Deduct: imports of goods and services	-20,214	-22,239	-25,553	-31,276
Residual error of estimate	-345	-83	675	268
Gross national expenditure at market prices	85,685	93,307	103,493	118,902

21.4 Gross national expenditure in constant (1961) dollars, 1970-73 (million dollars)

Item	1970 ^r	1971 ^r	1972 ^r	1973
Personal expenditure on consumer goods and services	39,571	41,674	44,533	48,083
Government current expenditure on goods and services	10,441	10,893	11,333	11,800
Gross fixed capital formation	13,503	14,563	15,339	16,940
Government	2,344	2,643	2,673	2,790
Business	11,159	11,920	12,666	14,150
Residential construction	2,536	3,032	3,361	3,790
Non-residential construction	3,890	4,052	3,973	4,288
Machinery and equipment	4,713	4,836	5,332	6,072
Value of physical change in inventories	20	256	406	763
Government	-15	-36	13	-14
Business				
Non-farm	188	314	731	826
Farm and grain in commercial channels	-153	-22	-338	-49
Exports of goods and services	17,261	18,113	19,407	21,017
Deduct: imports of goods and services	-16,532	-17,861	-19,981	-22,454
Residual error of estimate	-250	-53	478	196
Gross national expenditure in constant (1961) dollars	64,014	67,585	71,515	76,345

21.5 Year-to-year percentage change in gross national expenditure, 1970-73

Item	1970 ^r	1971 ^r	1972 ^r	1973
Personal expenditure on consumer goods and services				
Value	6.0	7.8	11.2	14.5
Volume	2.3	5.3	6.9	8.0
Price	3.6	2.4	4.1	6.1
Government current expenditure on goods and services				
Value	16.8	10.7	10.8	11.7
Volume	10.4	4.3	4.0	4.1
Price	5.8	6.2	6.4	7.2
Gross fixed capital formation				
Value	4.5	13.2	10.4	17.7
Volume	0.3	7.9	5.3	10.4
Price	4.2	4.9	4.8	6.6
Government				
Value	3.9	18.3	5.7	10.8
Volume	-0.6	12.8	1.1	4.4
Price	4.6	4.9	4.5	6.1
Business				
Value	4.7	12.1	11.4	19.2
Volume	0.5	6.8	6.3	11.7
Price	4.2	5.0	4.9	6.7
Residential construction				
Value	-9.0	26.0	19.7	23.3
Volume	-11.0	18.6	10.9	12.8
Price	2.2	6.2	8.0	9.4
Non-residential construction				
Value	12.8	10.5	4.2	16.4
Volume	7.3	4.2	-1.9	7.9
Price	5.2	6.1	6.3	7.9
Machinery and equipment				
Value	7.1	5.4	12.4	18.7
Volume	2.3	2.6	10.3	13.9
Price	4.7	2.7	2.0	4.2
Exports of goods and services				
Value	12.8	5.2	10.5	23.9
Volume	9.0	4.9	7.1	8.3
Price	3.5	0.3	3.1	14.4
Imports of goods and services				
Value	2.0	10.0	14.9	22.4
Volume	-0.7	8.0	11.9	12.4
Price	2.7	1.8	2.7	8.9
Gross national expenditure at market prices				
Value	7.4	8.9	10.9	14.9
Volume	2.5	5.6	5.8	6.8
Price	4.8	3.1	4.8	7.6

21.6 Personal income, by source and by province, 1970-73 (million dollars)

Source and province or territory	1970 ^r	1971 ^r	1972 ^r	1973
Source				
Wages, salaries and supplementary labour income	46,706	51,342	56,976	64,108
Military pay and allowances	914	908	979	1,039
Net income received by farm operators from farm production	1,119	1,394	1,597	2,972
Net income of non-farm unincorporated business including rent	5,424	5,861	6,359	6,803
Interest, dividends and miscellaneous investment income	5,220	5,519	6,254	7,467

21.6 Personal income, by source and by province, 1970-73 (million dollars) (concluded)

Source and province or territory	1970 ^r	1971 ^r	1972 ^r	1973
Current transfers				
From government				
Transfer payments to persons (excl. interest on public debt)	6,985	8,264	9,891	11,180
Capital assistance	10	22	44	45
From corporations (charitable and other contributions and bad debts)	148	155	164	177
From non-residents	107	165	176	201
Total, personal income	66,633	73,630	82,440	93,992
Province or territory				
Newfoundland	1,025	1,138	1,318	1,493
Prince Edward Island	229	239	280	336
Nova Scotia	1,895	2,100	2,374	2,682
New Brunswick	1,412	1,587	1,804	2,014
Quebec	16,682	18,253	20,586	23,345
Ontario	27,974	30,741	34,159	38,423
Manitoba	2,857	3,156	3,529	4,063
Saskatchewan	2,133	2,531	2,740	3,453
Alberta	4,953	5,521	6,204	7,279
British Columbia	7,245	8,127	9,182	10,606
Yukon Territory and Northwest Territories	148	164	187	212
Foreign countries ¹	80	73	77	86

¹Income of Canadians temporarily abroad, including pay and allowances of Canadian Armed Forces abroad.

21.7 Disposition of personal income, 1970-73 (million dollars)

Item	1970 ^r	1971 ^r	1972 ^r	1973
Personal expenditure on consumer goods and services	50,327	54,266	60,337	69,094
Current transfers				
To government				
Income taxes	8,811	10,143	11,410	13,308
Succession duties and estate taxes	266	279	231	205
Employer and employee contributions to social insurance and government pension funds	2,470	2,620	3,016	3,433
Other	1,077	1,106	1,043	1,069
To corporations (transfer portion of interest on the consumer debt)	641	654	706	1,009
To non-residents	169	168	178	214
Personal saving	2,872	4,394	5,519	5,660
Total, personal income	66,633	73,630	82,440	93,992

21.8 Personal expenditure on consumer goods and services, 1970-73 (million dollars)

Item	1970 ^r	1971 ^r	1972 ^r	1973
Food and non-alcoholic beverages	7,923	8,466	9,553	11,430
Tobacco and alcoholic beverages	3,294	3,583	3,922	4,240
Clothing, footwear and accessories	4,034	4,382	4,869	5,678
Gross rent, fuel and power	9,861	10,600	11,434	12,610
Furniture, furnishing and household equipment and operation	4,785	5,198	5,925	6,915
Transportation and communication	6,946	7,742	8,730	10,116
Medical care and health services	1,758	1,574	1,720	1,944
Other	11,726	12,721	14,184	16,161
Total	50,327	54,266	60,337	69,094
Durables	6,799	7,780	9,062	10,718
Semi-durables	6,645	7,224	8,108	9,497
Non-durables	16,186	17,404	19,387	22,528
Services	20,697	21,858	23,780	26,351

21.9 Federal, provincial and local government revenue and expenditure¹, 1970-73 (million dollars)

Item	1970 ^r	1971 ^r	1972 ^r	1973
Revenue				
Direct taxes: persons and unincorporated business				
Income taxes	8,811	10,143	11,410	13,308
Succession duties and estate taxes	266	279	231	205
Employer and employee contributions to social insurance and government pension funds	2,470	2,620	3,016	3,433
Direct taxes: corporate and government business enterprises	3,070	3,341	3,727	4,606
Direct taxes: non-residents (withholding taxes)	269	278	287	322
Indirect taxes	12,055	13,080	14,670	16,466
Other current transfers from persons	1,077	1,106	1,043	1,069
Investment income				
Interest and royalties	2,242	2,647	3,025	3,658
Remitted profits of government business enterprises	463	503	618	607
Total, revenue	30,723	33,997	38,027	43,674

21.9 Federal, provincial and local government revenue and expenditure¹, 1970-73 (million dollars) (concluded)

Item	1970 ^r	1971 ^r	1972 ^r	1973
Current expenditure				
Purchases of goods and services	16,630	18,415	20,395	22,779
Transfer payments to persons	6,985	8,264	9,891	11,180
Current transfers to non-residents	244	248	276	311
Interest on the public debt	3,250	3,582	4,126	4,699
Capital assistance	123	225	241	297
Subsidies	756	772	874	1,109
Saving	2,735	2,491	2,224	3,299
Total, current expenditure	30,723	33,997	38,027	43,674
Surplus or deficit (on a national accounts basis)				
Saving	2,735	2,491	2,224	3,299
Add: capital consumption allowances	1,231	1,334	1,482	1,693
Deduct: gross capital formation	-3,160	-3,714	-3,984	-4,380
Equals: surplus or deficit	806	111	-278	612

¹Excludes current transfers from other levels of government.**21.10 Annual growth rates of real domestic product, by industry, selected periods, 1961-73**

Industry	1961-66	1966-73	1961-73	1970-73
Agriculture	5.6	1.5	1.9	1.6
Forestry	5.7	1.3	2.8	4.4
Fishing and trapping	2.5	-2.2	0.2	-4.2
Mines (incl. milling), quarries and oil wells	6.6	6.6	6.1	6.2
Manufacturing	8.4	4.9	6.0	7.0
Non-durables	6.0	4.6	5.0	6.0
Durables	11.2	5.2	7.2	7.9
Construction	7.4	3.3	4.8	5.2
Electric power, gas and water utilities	7.2	8.5	8.0	8.5
Transportation, storage and communication	6.9	6.4	6.6	7.6
Transportation	7.6	6.4	6.8	8.0
Trade	6.7	4.8	5.5	6.4
Wholesale	8.2	4.8	6.2	5.9
Retail	5.8	4.7	5.0	6.8
Finance, insurance and real estate	6.3	5.4	5.9	5.1
Community, business and personal services	7.0	5.4	6.4	4.1
Public administration and defence	2.2	3.8	3.2	5.4
Real domestic product	6.8	5.0	5.7	5.9

21.11 Quantity indexes of real domestic product at factor cost, by industry of origin, 1971-73 (1961=100)

Industry	1971	1972	1973
Agriculture	152.7	140.8	142.3
Forestry	129.7	129.0	158.0
Fishing and trapping	110.0	102.4	102.7
Mines (incl. milling), quarries and oil wells	183.1	192.2	210.5
Manufacturing	183.3	195.8	211.9
Non-durables	162.3	172.4	184.4
Durables	209.9	225.4	246.7
Construction	165.6	166.5	177.9
Electric power, gas and water utilities	208.2	229.4	247.2
Transportation, storage and communication	184.3	198.8	216.7
Trade	170.6	182.6	192.5
Wholesale	183.6	197.0	206.0
Retail	162.6	173.8	184.2
Finance, insurance and real estate	176.9	186.0	197.4
Community, business and personal services	187.6	194.8	202.7
Public administration and defence	132.4	138.9	148.9
Real domestic product	175.4	184.5	197.2

21.12 Census value added in goods-producing industries, by province, 1969-71

Province or territory	1969		1970		1971	
	\$'000	%	\$'000	%	\$'000	%
Newfoundland	521,181	1.5	644,973	1.8	709,116	1.8
Prince Edward Island	69,656	0.2	86,006	0.2	84,125	0.2
Nova Scotia	706,504	2.0	732,042	2.1	731,603	1.9
New Brunswick	545,726	1.6	596,821	1.7	624,610	1.6
Quebec	8,335,892	24.0	8,603,099	24.3	9,266,839	23.8
Ontario	14,785,447	42.5	15,117,306	42.7	16,498,744	42.4
Manitoba	1,305,765	3.8	1,326,860	3.8	1,362,360	3.5
Saskatchewan	1,567,900	4.5	1,361,111	3.8	1,676,177	4.3
Alberta	3,235,800	9.3	3,404,156	9.6	3,825,507	9.8
British Columbia	3,579,448	10.3	3,420,605	9.7	4,041,156	10.4
Yukon Territory and Northwest Territories	93,363	0.3	109,181	0.3	100,921	0.3
Canada	34,746,681	100.0	35,402,160	100.0	38,921,158	100.0

21.13 Census value added in goods-producing industries, by industry and province, 1971

Industry	Province or territory							
	Newfoundland		Prince Edward Island		Nova Scotia		New Brunswick	
	\$'000	%	\$'000	%	\$'000	%	\$'000	%
Agriculture	—	—	18,928	21.9	33,253	4.5	32,412	5.1
Forestry	18,867	2.6	—	—	11,861	1.6	36,260	5.6
Fisheries	36,811	5.1	10,363	12.0	59,405	8.0	16,374	2.5
Trapping	75	—	5	—	135	—	138	—
Mining	180,641	24.9	68	0.1	63,503	8.5	37,817	5.9
Electric power	42,866	5.9	5,229	6.1	49,330	6.6	51,113	8.0
Manufacturing	135,496	18.6	22,384	25.9	311,757	41.8	296,802	46.3
Construction	311,466	42.9	29,379	34.0	216,667	29.0	170,798	26.6
Total	726,222	100.0	86,356	100.0	745,911	100.0	641,714	100.0
	Quebec		Ontario		Manitoba		Saskatchewan	
	\$'000	%	\$'000	%	\$'000	%	\$'000	%
	\$'000	%	\$'000	%	\$'000	%	\$'000	%
Agriculture	402,116	4.2	744,573	4.3	303,504	21.9	801,762	47.6
Forestry	145,172	1.5	106,650	0.6	4,694	0.3	6,626	0.4
Fisheries	10,855	0.1	6,948	—	2,403	0.2	1,802	0.1
Trapping	1,545	—	2,702	—	1,719	0.1	1,317	0.1
Mining	436,034	4.5	724,156	4.2	148,195	10.7	349,009	20.7
Electric power	563,218	5.9	636,036	3.6	85,147	6.1	75,246	4.5
Manufacturing	6,406,236	66.6	12,537,204	71.9	558,920	40.3	217,941	12.9
Construction	1,655,189	17.2	2,688,903	15.4	282,674	20.4	231,115	13.7
Total	9,620,365	100.0	17,447,172	100.0	1,387,256	100.0	1,684,818	100.0
	Alberta		British Columbia		Yukon Territory and Northwest Territories		Canada	
	\$'000	%	\$'000	%	\$'000	%	\$'000	%
	\$'000	%	\$'000	%	\$'000	%	\$'000	%
Agriculture	564,022	14.6	134,836	3.3	—	—	3,035,406	7.5
Forestry	10,025	0.3	357,457	8.7	24	—	697,636	1.7
Fisheries	729	—	58,588	1.4	984	1.0	205,262	0.5
Trapping	1,785	—	682	—	844	0.9	10,947	—
Mining	1,486,366	38.5	316,905	7.7	83,570	85.0	3,826,264	9.5
Electric power	118,538	3.1	219,050	5.4	9,680	9.8	1,855,453	4.6
Manufacturing	785,347	20.3	1,912,561	46.7	3,232	3.3	23,187,880	57.4
Construction	895,412	23.2	1,099,342	26.8	—	—	7,580,945	18.8
Total	3,862,224	100.0	4,099,421	100.0	98,334	100.0	40,399,793	100.0

¹Included with British Columbia.

21.14 Aggregate productivity measures, 1963-72 (1961=100)

Year and industry	Output	Persons employed	Man-hours	Output per person	Output per man-hour	Labour compensation	Unit labour cost
Commercial industries							
1963	113.9	104.7	103.9	108.7	109.6	111.6	98.0
1964	122.5	108.5	107.0	112.9	114.5	120.6	98.4
1965	131.7	113.1	110.6	116.5	119.0	133.3	101.2
1966	141.4	116.8	112.9	121.0	125.2	149.1	105.4
1967	145.5	119.0	114.4	122.3	127.2	163.0	112.0
1968	154.1	119.1	113.2	129.4	136.2	173.7	112.7
1969	163.5	122.8	115.6	133.1	141.4	192.7	117.8
1970	167.2	122.8	114.4	136.2	146.2	206.2	123.3
1971	177.3	124.5	115.3	142.4	153.8	224.9	126.9
1972	187.2	127.5	117.4	146.9	159.5	246.9	131.9
Annual rate of change							
1961-66	% 7.1	3.2	2.5	3.8	4.5	8.3	1.0
1966-72	% 4.8	1.4	0.5	3.4	4.3	8.7	3.7
1961-72	% 5.8	2.2	1.4	3.4	4.3	8.9	2.9
Commercial non-agricultural industries							
1963	112.7	106.3	106.2	106.0	106.1	112.4	99.7
1964	122.4	111.1	110.9	110.1	110.3	121.9	99.6
1965	132.0	117.4	116.8	112.5	113.1	135.6	102.7
1966	141.2	123.0	120.8	114.8	116.8	152.3	107.9
1967	147.0	125.1	122.4	117.5	120.1	166.4	113.2
1968	155.7	125.6	121.6	124.0	128.0	177.6	114.1
1969	165.2	130.2	124.9	126.9	132.3	197.5	119.6
1970	169.1	130.7	124.2	129.4	136.2	212.4	125.6
1971	178.7	132.7	125.3	134.7	142.6	232.1	129.9
1972	189.9	136.9	129.0	138.7	147.2	255.8	134.7
Annual rate of change							
1961-66	% 7.2	4.3	3.9	2.9	3.2	8.7	1.4
1966-72	% 5.0	1.7	0.9	3.2	4.0	8.9	3.8
1961-72	% 6.0	2.9	2.2	3.0	3.7	9.2	3.0
Commercial goods-producing industries							
1963	116.4	102.8	102.3	113.3	113.8	111.0	95.4
1964	125.2	105.6	104.5	118.6	119.8	120.3	96.1
1965	135.3	108.7	106.8	124.5	126.7	133.1	98.4
1966	145.4	110.8	108.1	131.3	134.5	149.3	102.7
1967	146.1	111.1	107.5	131.5	135.9	160.7	110.0
1968	155.4	110.1	105.7	141.2	147.0	169.6	109.2
1969	164.8	111.1	106.0	148.3	155.5	185.3	112.4
1970	166.3	108.4	102.7	153.4	161.9	194.7	117.1

21.14 Aggregate productivity measures, 1963-72 (1961=100) (concluded)

Year and industry	Output	Persons employed	Man-hours	Output per person	Output per man-hour	Labour compensation	Unit labour cost
Commercial goods-producing industries (concluded)							
1971	176.9	108.9	102.7	162.5	172.2	210.5	119.0
1972	184.6	109.0	102.3	169.4	180.4	227.4	123.2
Annual rate of change							
1961-66	% 7.7	2.1	1.6	5.4	6.0	8.3	0.6
1966-72	% 4.3	-0.4	-1.0	4.6	5.3	7.2	2.8
1961-72	% 5.5	0.8	0.1	4.7	5.4	8.1	2.4
Commercial non-agricultural goods-producing industries							
1963	114.1	105.3	106.4	108.3	107.2	112.6	98.7
1964	125.3	110.1	111.6	113.8	112.2	122.9	98.1
1965	136.2	116.1	117.9	117.3	115.5	137.5	101.0
1966	145.3	121.4	122.7	119.7	118.4	155.7	107.2
1967	149.2	121.1	121.3	123.2	123.0	167.1	112.0
1968	158.8	120.4	120.2	131.9	132.1	176.7	111.3
1969	168.4	122.4	121.1	137.6	139.1	193.8	115.1
1970	170.3	119.9	118.1	142.0	144.2	205.1	120.4
1971	179.7	120.6	118.1	149.0	152.2	222.6	123.9
1972	190.0	122.3	119.9	155.4	158.5	242.0	127.4
Annual rate of change							
1961-66	% 7.9	4.0	4.2	3.7	3.6	9.2	1.2
1966-72	% 4.6	—	-0.5	4.5	5.1	7.6	2.9
1961-72	% 5.9	1.8	1.5	4.0	4.3	8.6	2.6
Commercial service-producing industries							
1963	111.3	107.2	106.1	103.8	104.9	112.2	100.8
1964	119.5	112.1	110.3	106.6	108.3	120.9	101.2
1965	127.9	118.5	115.7	107.9	110.5	133.6	104.4
1966	137.2	124.4	119.2	110.3	115.1	148.9	108.5
1967	144.9	128.8	123.4	112.5	117.4	165.6	114.3
1968	152.7	130.5	122.9	117.0	124.2	178.4	116.9
1969	162.1	137.4	128.2	117.9	126.4	201.4	124.3
1970	168.1	140.7	129.6	119.5	129.7	219.9	130.8
1971	177.8	144.0	131.7	123.5	135.0	242.0	136.1
1972	189.9	150.5	137.0	126.1	138.6	270.0	142.2
Annual rate of change							
1961-66	% 6.6	4.5	3.7	2.0	2.8	8.2	1.6
1966-72	% 5.4	3.2	2.2	2.2	3.2	10.3	4.7
1961-72	% 6.0	3.8	2.8	2.1	3.1	9.8	3.5
Agriculture							
1963	136.9	95.3	93.5	143.7	146.5	100.2	73.2
1964	123.9	92.5	89.4	133.9	138.6	101.9	82.3
1965	127.6	87.2	83.3	146.3	153.3	101.9	79.8
1966	145.9	79.9	77.5	182.6	188.3	104.4	71.6
1967	118.6	82.1	78.5	144.5	151.1	115.7	97.5
1968	126.0	80.2	75.2	157.2	167.5	119.6	94.9
1969	133.3	78.6	74.2	169.7	179.6	125.5	94.1
1970	131.4	75.0	70.3	175.1	187.0	121.7	92.6
1971	152.7	74.9	70.4	203.9	217.0	125.5	82.2
1972	137.6	70.6	65.3	194.8	210.6	124.4	90.4
Annual rate of change							
1961-66	% 5.6	-4.1	-4.9	10.2	11.1	1.0	-4.4
1966-72	% 1.3	-2.2	-2.8	3.6	4.3	2.5	1.2
1961-72	% 1.9	-3.1	-3.7	5.1	5.8	2.7	0.8
Manufacturing							
1963	116.7	105.2	106.7	110.9	109.4	113.8	97.6
1964	127.9	110.0	112.0	116.2	114.2	124.1	97.0
1965	139.5	115.7	117.7	120.5	118.5	136.9	98.1
1966	149.3	121.2	122.4	123.2	122.0	153.5	102.8
1967	153.3	121.7	122.1	126.0	125.6	164.8	107.5
1968	163.6	120.8	121.4	135.4	134.8	175.8	107.5
1969	175.4	123.2	123.3	142.4	142.3	191.9	109.4
1970	173.0	120.3	119.6	143.8	144.7	201.0	116.2
1971	181.7	119.6	118.7	151.9	153.0	215.6	118.6
1972	193.9	121.9	121.4	159.1	159.7	236.9	122.2
Annual rate of change							
1961-66	% 8.4	4.0	4.2	4.3	4.1	8.9	0.4
1966-72	% 4.3	-0.1	-0.3	4.4	4.7	7.3	2.9
1961-72	% 6.0	1.8	1.7	4.1	4.3	8.3	2.2
Other commercial goods-producing industries (excl. agriculture and manufacturing)							
1963	109.6	105.5	105.8	103.9	103.6	110.2	100.5
1964	120.9	110.3	110.8	109.6	109.1	120.6	99.8
1965	130.6	117.0	118.3	111.6	110.4	138.8	106.3
1966	138.5	122.0	123.3	113.5	112.3	160.0	115.5
1967	142.2	120.0	119.6	118.5	118.9	171.5	120.6
1968	150.6	119.4	117.6	126.1	128.0	178.6	118.6
1969	156.4	120.7	116.4	129.6	134.3	197.4	126.2
1970	165.7	119.1	114.9	139.1	144.2	213.0	128.5
1971	176.3	122.8	116.6	143.6	151.2	236.2	134.0
1972	183.3	123.1	116.6	148.9	157.3	252.0	137.5
Annual rate of change							
1961-66	% 7.0	4.1	4.2	2.8	2.7	9.7	2.6
1966-72	% 5.0	0.3	-0.9	4.7	5.9	8.1	2.9
1961-72	% 5.7	1.8	1.2	3.8	4.5	9.2	3.3

21.15 Consumer price indexes for specific groups, 1964-73 (1961=100)

Year	Food	Housing	Clothing	Transportation	Health and personal care	Recreation, education and reading	Tobacco and alcohol	All-items index
Group weight as a percentage of total ¹	25	31	11	15	5	7	6	100
1964	106.8	103.9	106.0	101.0	108.0	103.9	103.4	104.8
1965	109.6	105.8	107.9	104.8	113.0	105.6	105.1	107.4
1966	116.6	108.7	112.0	107.3	116.5	108.6	107.6	111.4
1967	118.1	113.4	117.6	111.8	122.5	114.1	110.4	115.4
1968	122.0	118.6	121.1	114.7	127.4	119.7	120.4	120.1
1969	127.1	124.7	124.5	120.0	133.6	126.8	125.0	125.5
1970	130.0	130.9	126.8	124.8	139.5	131.2	126.5	129.7
1971	131.4	136.8	128.7	129.9	142.4	135.6	128.6	133.4
1972	141.4	143.2	132.0	133.3	149.2	139.4	132.1	139.8
1973	162.0	152.4	138.6	136.8	156.4	145.2	136.3	150.4

¹These weights, indicating the components' relative importance, are based on 1967 expenditures and have been incorporated since May 1973; prior to May 1973, the weights reflected 1957 expenditures.

21.16 Consumer price index reclassified by goods and services ¹, 1964-73 (1961=100)

Year	Goods		Semi-durable	Durable	Total	Total services	All-items
	Non-durable	Other					
Group weight as a percentage of total ¹	25	17	12	12	66	34	100
1964	106.8	102.1	105.9	98.3	104.0	106.3	104.8
1965	109.6	103.7	107.6	98.1	105.8	110.4	107.4
1966	116.6	106.4	111.4	98.1	109.8	114.3	111.4
1967	118.1	109.4	117.2	100.8	112.6	120.4	115.4
1968	122.0	115.2	120.9	102.4	116.8	126.7	120.1
1969	127.1	119.2	124.2	103.4	120.5	135.1	125.5
1970	130.0	122.1	126.3	104.7	122.9	143.1	129.7
1971	131.4	125.9	127.9	106.4	125.1	150.1	133.4
1972	141.4	129.5	131.0	107.7	130.8	157.9	139.8
1973	162.0	136.3	136.9	109.2	142.3	167.6	150.4

¹The previous supplementary classification (by type of commodity and service) has been revised. Historical series relating to the revised classification replace the previously published indexes.

²These weights, indicating the components' relative importance, are based on 1967 expenditures and have been incorporated since May 1973; prior to May 1973, the weights reflected 1957 expenditures.

21.17 Consumer price indexes for regional cities, 1964-73

Year	1961=100										1969=100	
	St. John's, Nfld.	Hali-fax, NS	Saint John, NB	Mont-real, Que.	Ottawa, Ont.	Toronto, Ont.	Winnipeg, Man.	Saskatoon—Regina, Sask.	Edmonton—Calgary, Alta.	Van-couver, BC	Quebec, Que.	Thunder Bay, Ont.
1964	103.9	102.7	103.5	104.5	104.5	104.3	103.8	103.5	102.6	102.6	...	...
1965	105.5	104.6	105.1	106.7	106.3	106.9	106.1	105.2	104.1	104.5	...	...
1966	108.0	107.4	107.8	109.9	110.4	111.6	109.3	108.3	107.5	107.0	...	...
1967	110.9	109.9	111.1	114.2	113.1	114.9	113.3	111.3	111.8	111.0	...	...
1968	115.9	114.2	115.1	118.1	118.4	119.3	118.2	115.8	116.7	115.1	...	...
1969	119.3	119.5	119.8	121.8	123.1	124.1	123.1	119.7	121.5	119.0	100.0	100.0
1970	121.6	124.4	123.4	124.3	127.4	127.3	127.0	122.2	125.1	123.0	102.4	102.3
1971	123.5	126.3	125.2	126.6	130.7	129.4	128.6	123.4	128.2	127.0	104.2	103.9
1972	129.7	131.0	130.8	131.4	136.0	134.7	133.5	128.3	133.2	132.1	107.1	107.6
1973	140.4	140.1	140.5	140.2	146.3	144.0	142.0	135.8	141.8	141.0	114.7	115.0

21.18 Percentage change in consumer price indexes in Canada and other countries, 1972-73

Country	% change	Country	% change
North America		Africa	
Canada	8	Zaire (Kinshasa)	33
Mexico (Mexico City)	16	Kenya (Nairobi)	8
United States	6	South Africa (European population)	10
South America		Asia	
Argentina (Buenos Aires)	60	Sri Lanka (Colombo)	10
Brazil (São Paulo)	15	India	17
Chile (Santiago)	353	Indonesia (Jakarta)	31
		Korea, Republic of	3
Europe		Pakistan (Karachi) — industrial workers	23
Belgium	7	Australasia	
Denmark	9	Australia	9
France	7	New Zealand	8
Germany, Federal Republic of	7		
Greece	5	Middle East	
Ireland	11	Iran	10
Netherlands	8	Israel	20
Sweden	7	Turkey (Ankara)	17
Switzerland	9		
United Kingdom	9		

21.19 Intercity indexes of retail price differentials for selected commodities and services (combined cities average=100)

Commodity grouping	City					
	St. John's, Nfld.	Charlotte-town, PEI	Halifax, NS	Saint John, NB	Montreal, Que.	Ottawa, Ont.
As at December 1973						
Transportation	108	104	102	105	106	104
Health and personal care	102	97	97	97	96	101
Recreation and reading	96	92	100	97	103	100
Tobacco and alcohol	126	105	107	108	102	101
As at May 1971 ¹						
Food at home	108	108	102	104	98	100
Household operation ²	105	106	105	104	105	99
Clothing	106	102	100	105	100	99
	Toronto, Ont.	Winnipeg, Man.	Regina, Sask.	Edmonton, Alta.	Vancouver, BC	
As at December 1973						
Transportation	100	91	93	94		98
Health and personal care	106	100	95	98		100
Recreation and reading	101	96	96	94		98
Tobacco and alcohol	100	102	102	97		95
As at May 1971 ¹						
Food at home	98	99	103	102		106
Household operation ²	97	92	93	93		103
Clothing	97	101	103	99		103

¹These components are now being processed using more recent data.²Excludes fuel and lighting.**21.20 Gross weighted industry selling price index (manufacturing)¹, 1962-73 (1961=100)**

Year	Index	Year	Index	Year	Index
1962	101.1	1966	107.7	1970	119.1
1963	102.5	1967	109.8	1971	121.6
1964	103.3	1968	112.1	1972	127.4
1965	104.7	1969	116.3	1973	142.7P

¹The index measures the movements of prices of gross shipments of manufacturing industries, including inter-industry shipments between individual industries within manufacturing. Therefore, it duplicates the movements of some prices in the sense that, for example, flour prices are given full weight as part of the shipments of the flour mills industry and then are implicitly counted again through full weighting of the shipment prices of those manufacturing industries which use flour as an ingredient in their outputs, e.g., bread, biscuits, cakes, etc.

21.21 General wholesale index annual averages, 1950-73 (1935-39=100)

Year	Average	Year	Average	Year	Average	Year	Average
1950	211.2	1956	225.6	1962	240.0	1968	269.9
1951	240.2	1957	227.4	1963	244.6	1969	282.4
1952	226.0	1958	227.8	1964	245.4	1970	286.4
1953	220.7	1959	230.6	1965	250.4	1971	289.9
1954	217.0	1960	230.9	1966	259.5	1972	310.3
1955	218.9	1961	233.3	1967	264.1	1973	376.9P

21.22 Index numbers of wholesale prices in Canada and other countries, 1971-73 (1963=100)

Country	1971	1972	1973	Country	1971	1972	1973
Belgium	117	122	137	India	172	186	222
Brazil	1,087	1,287	1,500	Ireland	147	162	186
Britain	133	140	..	Korea, Republic of	235	268	286
Canada	118	127	154	Netherlands	125	130	146
Chile	785	..	..	New Zealand	138	153	176
Denmark	132	138	159	Norway	129	133	144
France	127	133	..	Sweden	130	137	152
Germany, Federal Republic of	112	116	123	Switzerland	114	118	131
Greece	122	129	160	Turkey	169	199	..
				United States	120	126	143

21.23 Price indexes of residential and non-residential building materials and wage rates, 1964-73 (1961=100)

Year	Residential input indexes			Non-residential input indexes		
	Building materials	Labour	Total	Building materials	Labour	Total
1964	109.5	113.1	111.2	106.6	113.1	109.5
1965	115.8	118.6	117.1	111.5	118.6	114.7
1966	120.5	128.1	124.2	115.4	128.1	121.1
1967	125.3	140.8	132.8	117.8	140.8	128.2
1968	132.1	152.8	142.0	120.7	152.8	135.1
1969	139.2	164.5	151.4	126.1	164.5	143.3
1970	137.6	188.7	162.2	129.5	188.7	156.1
1971	144.4	214.8	177.8	134.1	213.1	169.6
1972	158.5	237.4	195.6	142.3	233.0	183.0
1973	179.0	261.6	219.0	157.3	249.9	198.9

21.24 Highway construction price indexes, by province, and for all-items seven-province composite, years ended Mar. 31, 1963-72

Year	1961=100								1964=100
	Nfld.	NS	NB	Ont. ¹	Man.	Sask.	BC	All-items seven-province composite	Que.
1963	101.1	95.9	102.2	126.5	120.2	102.7	96.9	110.6	..
1964	108.4	96.4	103.7	123.7	123.7	116.8	106.1	113.5	100.0
1965	119.5	116.8	103.2	144.0	133.3	144.4	127.7	130.9	96.6
1966	129.6	116.1	103.6	157.4	152.9	168.1	129.7	140.1	103.8
1967	115.2	122.7	103.0	156.3	153.8	137.6	119.4	135.1	101.5
1968	120.8	119.9	101.8	151.5	140.8	124.9	126.6	132.9	101.1
1969	116.5	123.1	102.2	154.0	144.6	132.1	143.2	138.0	107.2
1970	145.5	134.1	121.3	159.2	161.1	144.9	134.4	145.7	109.5
1971	176.2	148.3	114.8	164.5	159.7	147.1	139.0	151.9	125.6
1972	161.7	160.5	144.2	171.9	167.9	154.6	142.0	159.5	134.6

¹Direct comparisons should not be made between this index and the highway index published by the Ontario Ministry of Transportation and Communications; the item content is substantially different.

21.25 Price indexes of electrical utility distribution systems, transmission lines, transformer stations, and hydro-electric generating stations, 1964-73 (1961=100)

Year	Distribution systems			Transmission lines	Transformer stations			Hydro-electric generating stations
	Construction	Equipment	Total		Structures and improvements	Equipment	Total	
1964	107.7	97.6	104.6	102.7	112.9	111.9	112.0	109.6
1965	112.3	95.4	107.1	108.5	122.0	117.4	118.0	115.0
1966	118.4	99.0	112.4	113.0	130.2	120.4	122.4	122.1
1967	125.3	95.7	116.1	118.7	126.9	115.1	121.2	126.5
1968	126.3	91.8	115.6	121.9	124.2	106.7	117.2	131.6
1969	133.0	91.8	120.3	127.5	131.6	106.1	120.4	139.5
1970	144.5	95.4	129.3	136.5	139.2	119.4	132.5	148.3
1971	149.6	98.6	133.8	141.4	143.7	124.8	139.2	155.2
1972	158.1	98.3	139.6	147.6	149.3	123.5	141.4	164.8
1973P	175.7	98.5	151.8	162.1	162.6	127.7	149.3	176.5

21.26 Price indexes of machinery and equipment, 1964-73 (1968=100)

Year	Construction	Forestry (east of the Rockies)	Year	Construction	Forestry (east of the Rockies)
1964	87.3	...	1969	104.4	102.9
1965	89.2	...	1970	106.4	106.4
1966	92.1	...	1971	108.4	109.3
1967	94.7	...	1972	110.8	112.3
1968	100.0	100.0	1973	114.9	117.0

21.27 Farm input price index total, 1964-73 (1961=100)

Year	East	West	Canada	Year	East	West	Canada
1964	107.0	110.3	108.6	1969	128.1	130.2	129.1
1965	110.2	114.1	112.0	1970	131.4	131.0	131.2
1966	116.9	120.6	118.6	1971	135.8	135.9	135.9
1967	121.4	121.6	121.5	1972	141.7	145.2 ^o	143.3
1968	124.3	125.6	124.9	1973 ^p	170.1	162.9	166.7

21.28 Index numbers of common and preferred stocks, 1964-73 (1961=100)

Year	Investors index				Mining index ¹	Preferred stocks ¹
	Total	Industrials	Utilities	Finance		
1964	120.8	125.9	122.2	98.9	109.3	105.8
1965	132.8	139.8	136.3	100.7	122.5	105.1
1966	125.3	132.9	129.4	89.9	121.1	94.1
1967	131.3	140.4	133.4	92.4	110.9	89.9
1968	135.2	143.7	131.8	104.1	119.5	79.9
1969	149.8	157.7	142.0	126.4	127.3	77.3
1970	137.7	145.5	126.3	118.1	113.5	67.7
1971	147.4	150.3	146.6	137.7	105.1	68.8
1972	174.6	179.3	155.3	180.7	111.8	70.9
1973	187.5	200.8	145.9	182.1	132.5	72.7

¹Not included in investors index.**21.29 Summary of the Canadian balance of international payments between Canada and all non-residents, 1967-73 (million dollars)**

Year	Current account balances			Capital account flows			Allocation of SDRs	Net official monetary movements
	Merchandise	Non-merchandise	Balance	Long-term	Short-term	Net		
1967	+566	-1,065	-499	+1,415	-896	+519	...	+20
1968	+1,471	-1,568	-97	+1,669	-1,223	+446	...	+349
1969	+964	-1,881	-917	+2,337	-1,355	+982	...	+65
1970	+3,052	-1,946	+1,106	+752	-328	+424	+133	+1,663
1971	+2,427	-2,121	+306	+482	-11	+471	+119	+896
1972	+1,645	-2,300	-655	+1,762	-888	+874	+117	+336
1973	+2,231	-2,656	-425	+659	-701	-42	—	-467

21.30 Current account transactions between Canada and all non-residents, 1967-73 (million dollars)

Year	Current receipts			Current payments			Current account balance
	Merchandise exports	Service transactions	Transfers	Merchandise imports	Service transactions	Transfers	
1967	11,338	3,325	640	10,772	4,462	568	-499
1968	13,720	3,070	674	12,249	4,822	490	-97
1969	15,035	3,695	695	14,071	5,719	552	-917
1970	16,921	4,246	765	13,869	6,345	612	+1,106
1971	17,961	4,310	875	15,534	6,705	601	+306
1972	20,222	4,386	906	18,577	6,976	616	-655
1973	25,500	4,991	1,039	23,269	8,007	679	-425

21.31 Canadian balance of international payments, by area, 1972 and 1973 (million dollars)

Item	United States		United Kingdom		Other non-residents		All non-residents	
	1972 ^p	1973 ^p	1972 ^p	1973 ^p	1972 ^p	1973 ^p	1972 ^p	1973 ^p
CURRENT ACCOUNT								
Current receipts								
Merchandise exports (adjusted)	14,025	17,253	1,387	1,607	4,810	6,640	20,222	25,500
Service receipts								
Travel	1,023	1,160	57	82	150	204	1,230	1,446
Interest and dividends	361	406	25	37	241	210	627	653
Freight and shipping	704	799	120	135	396	487	1,220	1,421
Other service receipts	700	750	212	287	397	434	1,309	1,471
Total, service receipts	2,788	3,115	414	541	1,184	1,335	4,386	4,991
Total, exports of goods and services	16,813	20,368	1,801	2,148	5,994	7,975	24,608	30,491
Transfer receipts								
Inheritances and immigrants' funds	168	124	71	90	204	302	443	516
Personal and institutional remittances	129	132	14	20	33	49	176	201
Withholding tax	..	..	..	..	..	..	287	322
Total, current receipts	17,110	20,624	1,886	2,258	6,231	8,326	25,514	31,530

21.31 Canadian balance of international payments, by area, 1972 and 1973 (million dollars) (concluded)

Item	United States		United Kingdom		Other non-residents		All non-residents	
	1972P	1973P	1972P	1973P	1972P	1973P	1972P	1973P
CURRENT ACCOUNT (concluded)								
Current payments								
Merchandise imports (adjusted)	12,792	16,439	948	1,003	4,837	5,827	18,577	23,269
Service payments								
Travel	919	1,073	174	194	371	475	1,464	1,742
Interest and dividends	1,417	1,653	105	110	179	234	1,701	1,997
Freight and shipping	726	860	122	140	498	591	1,346	1,591
Other service payments	1,562	1,704	147	166	469	485	2,178	2,355
Withholding tax	..	..	..	..	..	..	287	322
Total, service payments	4,624	5,290	548	610	1,517	1,785	6,976	8,007
Total, imports of goods and services	17,416	21,729	1,496	1,613	6,354	7,612	25,553	31,276
Transfer payments								
Inheritances and emigrants' funds	88	84	37	32	37	38	162	154
Personal and institutional remittances	60	68	34	29	133	172	227	269
Official contributions	—	—	—	—	227	256	227	256
Total, current payments	17,564	21,881	1,567	1,674	6,751	8,078	26,169	31,955
Current account balance								
Merchandise trade	+1,233	+814	+439	+604	-27	+813	+1,645	+2,231
Service transactions	-1,836	-2,175	-134	-69	-333	-450	-2,590	-3,016
Net transfers	+149	+104	+14	+49	-160	-115	+290	+360
Total, current account balance	-454	-1,257	+319	+584	-520	+248	-655	-425
CAPITAL ACCOUNT								
Direct investment								
In Canada	+569	+485	-18	+127	+164	+108	+715	+720
Abroad	-138	-366	-28	-111	-219	-113	-385	-590
Portfolio transactions								
Canadian securities								
Outstanding bonds	-4	-27	+43	+27	+254	+31	+293	+31
Outstanding stocks	-146	+20	-42	-58	+126	+14	-62	-24
New issues	+1,056	+990	+47	+15	+653	+348	+1,756	+1,353
Retirements	-415	-382	-46	-46	-90	-235	-551	-663
Foreign securities								
Outstanding issues	+273	+73	+10	-7	+21	+27	+304	+93
New issues	-12	-4	-17	-3	-29	-49	-58	-56
Retirements	+7	+8	+1	—	+6	+7	+14	+15
Loans and subscriptions,								
Government of Canada								
Advances	—	—	—	—	-248	-249	-248	-249
Repayments	—	—	+21	+22	+16	+20	+37	+42
Columbia River Treaty	—	+1	—	—	—	—	—	+1
Export credits directly or indirectly at risk of the Government of Canada	-6	-7	-36	-9	-209	-169	-251	-185
Other long-term capital transactions	+90	+182	+76	+13	+32	-24	+198	+171
Balance of capital movements in long-term forms	+1,274	+973	+11	-30	+477	-284	+1,762	+659
Resident holdings of foreign currencies:								
Chartered bank net foreign currency position								
with non-residents	+262	-263	+472	+372	-97	-452	+637	-343
Non-bank holdings of foreign currencies abroad	-71	-234	-92	+87	-8	-67	-171	-214
Non-resident holdings of Canadian:								
Dollar deposits	+6	+54	+21	-14	+109	+119	+136	+159
Government demand liabilities	—	—	—	—	+27	+63	+27	+63
Treasury bills	-1	+3	+1	—	+22	-27	+22	-24
Commercial paper	-118	-1	+1	-1	-1	—	-118	-2
Finance company paper	-52	-22	—	—	+2	-1	-50	-23
Other short-term paper	-17	+165	-1	-1	+1	—	-17	+164
Other finance company obligations	-28	+14	+1	+3	—	—	-27	+17
Other short-term capital transactions	-1,286	-486	-86	-45	+45	+33	-1,327	-498
Balance of capital movements in short-term forms	-1,305	-770	+317	+401	+100	-332	-888	-701
Total, net capital balance	-31	+203	+328	+371	+577	-616	+874	-42
Balance settled by exchange transfers	+776	..	-648	..	-128	..	—	—
Allocation of Special Drawing Rights	—	—	—	—	+117	—	+117	—
Net official monetary movements								
Official international reserves	+291	..	-1	..	+46	..	+336	-467
Official monetary liabilities	—	..	—	..	—	..	—	—
Net official monetary movements	+291	..	-1	..	+46	..	+336	-467

21.32 Canadian balance of international indebtedness, selected years, 1939-70 (billion dollars)

Item	1939	1950	1960	1968 ^f	1969 ^f	1970
CANADIAN ASSETS						
Direct investment	0.7	1.0	2.5	4.6	5.2	6.2
Portfolio investment	0.7	0.6	1.3	2.9	3.0	2.7
Miscellaneous investment ¹	—	—	—	0.8	0.8	1.0
Government of Canada credits ²	—	2.0	1.5	1.4	1.4	1.5
Government of Canada subscriptions to international investment agencies	—	0.1	0.1	0.2	0.2	0.3
Total, Canadian long-term investment abroad	1.4	3.7	5.3	9.9	10.7	11.7
Net official monetary assets	0.5	2.0	2.0	3.3	3.3	4.7
Other Canadian short-term holdings of foreign exchange	—	0.1	1.2	2.2	3.6	3.6
Gross assets ³	1.9	5.7	8.5	15.4	17.6	20.0
Net official monetary assets	0.5	2.0	2.0	3.3	3.3	4.7
United States ^{3,4}	0.9	1.2	3.7	7.5	8.6	8.6
United Kingdom ^{3,4}	0.1	1.6	1.5	2.8	4.1	4.1
Other countries ^{3,4}	0.4	0.9	1.3	1.8	1.5	2.6
Short-term receivables (not included elsewhere) ⁵	..	0.2	0.5	2.9	3.1	3.6
Gross assets	1.9 ^a	5.9	8.9	18.2	20.7	23.6
CANADIAN LIABILITIES						
Direct investment	2.3	4.0	12.9	22.5	24.4	26.4
Government bonds	1.7	2.0	3.3	6.8	7.8	7.9
Other portfolio investment	2.6	2.4	4.6	6.1	6.8	6.9
Miscellaneous investment	0.3	0.3	1.4	2.6	2.7	2.9
Total, foreign long-term investment in Canada	6.9	8.7	22.2	38.0	41.6	44.0
Non-resident equity in Canadian assets abroad	0.2	0.3	1.1	2.0	2.3	2.7
Official Special Drawing Rights liabilities	...	...	...	...	...	0.1
Total, long-term liabilities	7.1	9.0	23.3	39.9	43.9	46.9
Non-resident holdings of Canadian dollars	0.3	0.6	0.6	0.8	0.9	0.8
Gross liabilities ³	7.4	9.6	24.0	40.7	44.7	47.7
United States ³	4.5	7.1	18.0	32.4	35.2	37.4
United Kingdom ³	2.6	2.0	3.5	4.0	4.2	4.3
Other countries ^{3,4}	0.3	0.5	2.4	4.4	5.4	6.0
Short-term payables (not included elsewhere) ^{5,7}						
Finance company obligations		0.8	1.6	0.9	1.2	1.3
Other		..	..	2.8	2.8	3.0
Gross liabilities	7.4 ^a	10.4	25.6	44.4	48.8	52.1
CANADA'S INTERNATIONAL INDEBTEDNESS						
Canadian net international indebtedness	5.5 ^a	4.5	16.6	26.2	28.1	28.5
Net official monetary assets	-0.5	-2.0	-2.0	-3.3	-3.3	-4.7
United States	3.6	5.9	14.3	24.9	26.6	28.8
United Kingdom	2.5	0.4	2.0	1.2	0.1	0.2
Other countries	-0.1	-0.4	1.1	2.6	3.9	3.4
Short-term (not included elsewhere)	..	0.6	1.1	0.8	0.9	0.8

¹Includes export credits by government and private sectors less reserve against government inactive assets.²Includes medium-term non-marketable United States government securities held under the Columbia River Treaty arrangements since 1964.³Excludes short-term receivables and payables.⁴Excludes net official monetary assets.⁵Country distribution not available.⁶Includes international financial agencies.⁷At the end of 1964 about \$450 million previously classified as long-term investment was shown as part of short-term finance company obligations.**21.33 Foreign long-term investment in Canada, by type of investment, classified by estimated distribution of ownership, as at Dec. 31, 1969 and 1970 (million dollars)**

Year and type of investment	Estimated distribution of ownership			Total investments of non-residents
	United States ¹	United Kingdom ¹	Other countries	
1969				
Government securities				
Government of Canada	419	35	304	758
Provincial	4,664	130	638	5,432
Municipal	1,414	25	133	1,572
Total, government securities	6,497	190	1,075	7,762
Utilities				
Railways	450	396	141	987
Other (excl. public enterprises)	1,007	82	53	1,142
Total, public utilities	1,457	478	194	2,129
Manufacturing	9,882	1,020	737	11,639
Petroleum and natural gas	5,859	556	750	7,165
Other mining and smelting	3,054	253	388	3,695
Merchandising	1,277	350	135	1,762
Financial	2,580	738	650	3,968
Other enterprises	677	80	63	820
Miscellaneous investments	1,762 ²	160	740	2,662
Total, investments, 1969	33,045	3,825	4,732	41,602

21.33 Foreign long-term investment in Canada, by type of investment, classified by estimated distribution of ownership, as at Dec. 31, 1969 and 1970 (million dollars) (concluded)

Year and type of investment	Estimated distribution of ownership			Total investments of non-residents
	United States ¹	United Kingdom ¹	Other countries	
1970				
Government securities				
Government of Canada	368	37	198	603
Provincial	4,921	219	666	5,806
Municipal	1,346	50	133	1,529
Total, government securities	6,635	306	997	7,938
Utilities				
Railways	427	388	142	957
Other (excl. public enterprises)	1,174	84	69	1,327
Total, public utilities	1,601	472	211	2,284
Manufacturing	10,405	1,006	905	12,316
Petroleum and natural gas	6,179	613	802	7,594
Other mining and smelting	3,163	250	452	3,865
Merchandising	1,375	312	170	1,857
Financial	2,848	803	704	4,355
Other enterprises	764	89	86	939
Miscellaneous investments	1,944 ²	170	775	2,889
Total, investments, 1970	34,914	4,021	5,102	44,037

Common and preferred stocks are at book values as shown in the balance sheets of the issuing companies; bonds and debentures are valued at par; and liabilities in foreign currencies are converted into Canadian dollars at par of exchange.

¹Includes some investments held for residents of other countries.

²Includes Columbia River Treaty receipts.

21.34 Canadian long-term investment abroad¹, by location and by type of investment, selected years, 1939-70 (million dollars)

Location and type of investment	1939	1951	1960	1967	1968	1969	1970 ²
United States							
Direct investment	412	912	1,618	2,190	2,546	2,979	3,251
Portfolio investment							
Stocks	380	289	827	1,779	2,086	2,155	2,110
Bonds	121	87	120	188	212	214	224
Miscellaneous investment	..	9	18	192	213	216	286
Government of Canada credits ³	—	—	—	123	90	63	31
Government of Canada subscriptions to international investment agencies	—	—	—	—	—	—	—
Total, United States	913	1,297	2,583	4,472	5,147	5,627	5,902
United Kingdom							
Direct investment	59	74	257	515	570	595	586
Portfolio investment							
Stocks	22	17	26	52	57	60	61
Bonds	21	17	16	15	20	20	20
Miscellaneous investment	..	13	18	54	36	45	66
Government of Canada credits ³	—	1,394	1,092	1,040	1,058	1,038	1,018
Government of Canada subscriptions to international investment agencies	—	—	—	—	—	—	—
Total, United Kingdom	102	1,515	1,409	1,676	1,741	1,758	1,751
Other Commonwealth countries ⁴							
Direct investment	54	88	299	613	700	725	791
Portfolio investment							
Stocks	7	6	10	13	14	15	17
Bonds	15	8	18	27	24	22	23
Miscellaneous investment	..	..	..	..	..	..	..
Government of Canada credits	—	—	35	36	77	141	243
Government of Canada subscriptions to international investment agencies	—	—	—	—	—	—	—
Total, other Commonwealth countries	76	102	362	689	815	903 ³	1,074
Other countries							
Direct investment	146	92	293	712	801	912	1,560 ⁴
Portfolio investment							
Stocks	102	155	187	250	253	287	56 ⁴
Bonds	51	30	111	242	219	203	207
Miscellaneous investment	..	-80	-54	540	506	518	663
Government of Canada credits	31	528	335	207	208	206	202
Government of Canada subscriptions to international investment agencies	—	66	85	178	209	238	268
Total, other countries	330	791	957	2,129	2,196	2,364	2,956

21.35 Summary of the financial flows accounts matrix, 1972 and 1973 (million dollars) (concluded)

Year and category	Financial institutions						Governments			
	Monetary authorities		Chartered banks and other lending institutions ¹		Other financial institutions ²		Federal government ³		Provincial and local governments ⁴	
	Use	Source	Use	Source	Use	Source	Use	Source	Use	Source
1973										
Gross domestic saving	—	1	—	585	—	190	—	1,861	—	3,131
Non-financial capital acquisition	6	—	200	—	251	—	522	—	3,915	—
Net lending or borrowing	—	-5	—	385	—	-61	—	1,339	—	-784
Discrepancy	—	-6	—	51	—	-1	—	171	—	46
Net increase in financial assets	25	—	18,723	—	5,746	—	1,350	—	1,703	—
Net increase in liabilities	—	24	—	18,389	—	5,806	—	182	—	2,533
Net financial investment	—	1	—	334	—	-60	—	1,168	—	-830
Official international reserves	-467	—	—	—	—	—	—	—	—	—
Canadian currency and deposits	—	931	805	11,072	459	223	-476	65	216	—
Foreign currency and deposits	—	—	3,624	4,816	58	—	—	—	-95	—
Consumer credit	—	—	2,614	—	72	—	—	—	—	—
Other receivables or payables	—	—	—	1	-55	43	1	-7	15	-26
Bank and other loans	-2	—	5,839	314	719	-205	638	62	103	641
Short-term debt instruments ⁶	188	—	396	801	-286	99	-6	530	-9	-190
Mortgages	—	—	5,246	-1	1,444	—	-1	—	173	10
Canadian bonds	420	—	-350	664	1,976	183	1,035	-636	367	2,155
Life insurance and pensions	—	—	—	—	—	3,494	—	-26	—	—
Claims on associated enterprises	135	-847	248	280	401	1,340	-43	17	784	-40
Canadian stocks	—	—	96	161	958	110	152	—	9	—
Foreign securities	—	—	27	—	-154	—	—	—	—	—
Other assets or liabilities	-249	-60	178	281	154	519	50	177	140	-17
Official monetary reserve offsets	—	—	—	—	—	—	—	—	—	—
	Non-financial corporations ⁵		Persons, unincorporated business and residual		Rest of the world		Total			
	Use	Source	Use	Source	Use	Source	Use	Source	Use	Source
Gross domestic saving	—	11,902	—	9,357	—	787	—	—	27,814	—
Non-financial capital acquisition	16,752	—	5,806	—	362	—	27,814	—	—	—
Net lending or borrowing	—	-4,850	—	3,551	—	425	—	—	—	—
Discrepancy	—	-684	—	423	—	—	—	—	—	—
Net increase in financial assets	6,650	—	11,290	—	4,914	—	50,401	—	—	—
Net increase in liabilities	—	10,816	—	8,162	—	4,489	—	50,401	—	—
Net financial investment	—	-4,166	—	3,128	—	425	—	—	—	—
Official international reserves	—	—	—	—	—	-467	—	-467	—	—
Canadian currency and deposits	214	—	10,840	—	233	—	12,291	—	12,291	—
Foreign currency and deposits	381	—	1,141	—	3,398	3,691	8,507	—	8,507	—
Consumer credit	104	—	47	2,837	—	—	2,837	—	2,837	—
Other receivables or payables	3,320	2,703	—	567	—	—	3,281	—	3,281	—
Bank and other loans	164	2,744	—	3,539	342	708	7,803	—	7,803	—
Short-term debt instruments ⁶	518	20	419	—	40	—	1,260	—	1,260	—
Mortgages	33	367	—	6,519	—	—	6,895	—	6,895	—
Canadian bonds	-62	1,914	255	44	683	—	4,324	—	4,324	—
Life insurance and pensions	—	—	3,468	—	—	—	3,468	—	3,468	—
Claims on associated enterprises	960	824	-5,344	-5,344	722	590	-2,137	—	-3,180	—
Canadian stocks	95	991	-1,105	—	14	—	219	—	1,262	—
Foreign securities	35	—	59	—	—	-33	-33	—	-33	—
Other assets or liabilities	888	1,253	1,510	—	-518	—	2,153	—	2,153	—
Official monetary reserve offsets	—	—	—	—	—	—	—	—	—	—

¹Other lending institutions are Quebec savings banks, credit unions, caisses populaires, mortgage and trust companies and sales finance and consumer loan companies.

²Insurances, trustee pension funds, and other private and public financial institutions.

³Includes Canada Pension Plan.

⁴Includes hospitals and Quebec Pension Plan.

⁵Includes government enterprises.

⁶Includes Government of Canada, provincial and municipal governments treasury bills.

Sources

21.1 - 21.9 Gross National Product Division, System of National Accounts (Current) Branch, Statistics Canada.

21.10 - 21.13 Industry Product Division, System of National Accounts (Current) Branch, Statistics Canada.

21.14 Input-Output Division, System of National Accounts (Structural) Branch, Statistics Canada.

21.15 - 21.28 Prices Division, General Statistics Branch, Statistics Canada.

21.29 - 21.34 Balance of Payments Division, System of National Accounts (Current) Branch, Statistics Canada.

21.35 Financial Flows and Multinational Enterprise Division, System of National Accounts (Current) Branch, Statistics Canada.

Appendix 1

Functions of government organizations and related agencies

A summary organization chart of the federal government appears in Chapter 3. A detailed chart is available from Information Canada.

Agricultural Products Board. The Agricultural Products Board was established under authority of the Emergency Powers Act by Order in Council PC 3415 of July 31, 1951, to administer contracts with other countries to buy, or sell, agricultural products, and to carry out other commodity operations as considered necessary or desirable as determined by Canada's needs and requirements. The Board was re-established under the Agricultural Products Board Act in 1952 and operates now under RSC 1970, c.A-5. The Board is a part of the Canada Department of Agriculture.

Agricultural Stabilization Board. Established in 1958 as a Crown corporation under the Agricultural Stabilization Act (RSC 1970, c.A-9), the Board is empowered to stabilize prices of agricultural products both to assist the industry in realizing fair returns for labour and investment and to maintain a fair relationship between the prices received by farmers and the costs of goods and services that they buy. Programs under the Act are administered by Board staff with assistance from the Canada Department of Agriculture. The Board reports to Parliament through the Minister of Agriculture.

Air Canada. Formerly Trans-Canada Air Lines, Air Canada was incorporated by Act of Parliament in 1937 (RSC 1970, c.A-11) to provide a publicly owned air transportation service, with powers to carry on its business throughout Canada and outside Canada. The corporation now maintains passenger, mail and commodity traffic services over nation-wide routes as well as services to the United States, Britain, Ireland, Belgium, France, Switzerland, the Federal Republic of Germany, Austria, Denmark, the USSR, Czechoslovakia, Bermuda, the Bahamas, Jamaica, Antigua, Barbados and Trinidad. Air Canada is responsible to Parliament through the Minister of Transport.

Anti-dumping Tribunal. Under the Anti-dumping Act (RSC 1970, c.A-15, as amended by SC 1970-71, c.3), the Anti-dumping Tribunal is declared to be a court of record and makes formal inquiry into the impact of dumping on production in Canada. Within 90 days of a preliminary determination of dumping by the Deputy Minister of National Revenue for Customs and Excise, the Tribunal must make an order or finding on the question of material injury, threat of material injury or retardation to production in Canada of like goods. Also, the Tribunal may at any time after the date of an order or a finding made by it review, rescind, change, alter or vary the said order or finding or may rehear any matter before deciding it. In addition, the Governor in Council may request the Tribunal to investigate and report on any matter relative to the importation of goods into Canada that may cause or threaten injury to the production of any goods in this country.

The Tribunal consists of a chairman, four other members, a secretary, and research and support staff. Its offices are located in Ottawa. The Tribunal carries out its responsibilities under the Act by holding public and in camera hearings, personal interviews, in-house research, statistical and financial analysis, interviews with Canadian manufacturers and associations, and inspection of facilities. The Tribunal reports to Parliament through the Minister of Finance.

Army Benevolent Fund Board. The Army Benevolent Fund Board, established by the Army Benevolent Fund Act (RSC 1970, c.A-16), administers the Army Benevolent Fund, a special account set up in the Consolidated Revenue Fund. The Board awards grants from the special account to veterans or their dependents for relief, if none is available from government sources, and for educational assistance, contingent on need and continued progress. The Board has five members appointed by the Governor in Council, one of whom is nominated by the Royal Canadian Legion and one by the National Council of Veterans Associations in Canada. Head office is in Ottawa. The Board reports to Parliament through the Minister of Veterans Affairs.

Atlantic Development Council. Created under the 1969 Government Organization Act (SC 1968/69, c.28), the Atlantic Development Council is composed of 11 members representative of the area appointed by the Governor in Council to advise the Minister of Regional Economic Expansion on plans and policies for economic expansion and social adjustment in the Atlantic Provinces, and to carry out feasibility studies and evaluate policies or programs submitted within the framework of an over-all strategy for the development of the region. The Council reports to Parliament through the Minister of Regional Economic Expansion.

Atomic Energy Control Board. By Act of Parliament (RSC 1970, c.A-19) proclaimed October 1946, the regulation and control of atomic energy in Canada was placed under the Atomic Energy Control Board. The Board reports to Parliament through the Minister of Energy, Mines and Resources.

Atomic Energy of Canada Limited. This Crown company was incorporated in February 1952 under the Atomic Energy Control Act, 1946 (RSC 1970, c.A-19) to take over from the National Research Council on April 1, 1952 the operation of the Chalk River project. The main activities of the company are the development of economic nuclear power, scientific research and development in the atomic energy field, the operation of nuclear reactors, and the production of radioactive isotopes and associated equipment such as cobalt-60 beam therapy units for the treatment of cancer. AECL has a Heavy Water Projects group which is responsible for the provision of sufficient quantities of heavy water to meet the demands of the CANDU reactor program; this includes construction and operation of heavy water plants, purchase of heavy water and research and development involving present and prospective production methods. The company reports to Parliament through the Minister of Energy, Mines and Resources.

Bank of Canada. Legislation of 1934 (RSC 1970, c.B-2) provided for the establishment of a central bank in Canada to regulate credit and currency, to control and protect the external value of the Canadian dollar and to stabilize the level of production, trade, prices and employment as far as may be possible within the scope of monetary action. The Bank acts as the fiscal agent of the Government of Canada, manages the public debt and has the sole right to issue notes for circulation in Canada. It is managed by a board of directors appointed by the government and composed of a governor, a deputy governor and 12 directors; the Deputy Minister of Finance is also a member of the board. The Bank reports to Parliament through the Minister of Finance.

Bilingual Districts Advisory Board. The Official Languages Act (RSC 1970, c.O-2) requires the creation of federal bilingual districts, in which federal services will be provided in English and French. For a territory to be declared a bilingual district, the two official languages must be spoken by residents of the area and at least 10% of the total population must speak a mother tongue which is the official language of the linguistic minority within the area. An area may be considered a federal bilingual district, even if it does not reach the required percentage, if federal services were already available in both official languages before the Act came into force. To determine the boundaries of these districts, the Act requires the federal government to set up an Advisory Board of five to 10 members, representing the several provinces or regions of Canada. The Board must be constituted as soon as possible after each decennial census and makes recommendations to the Cabinet based on census statistics. Its report is submitted to the Governor in Council who presents it to Parliament through the Secretary of State.

Blue Water Bridge Authority. The Bridge Authority was created by the Blue Water Bridge Authority Act (SC 1964, c.6). It is responsible for the operation of the Canadian portion of the bridge spanning the St. Clair River from Point Edward, Ont. to Port Huron, Mich. Tolls set are subject to the approval of the Canadian Transport Commission. The Authority is a non-profit organization and all toll moneys must be used for the operation and maintenance of the present bridge or for the building of a new one. It is not an agent of the Crown but members of the Authority are appointed by the Governor in Council on the recommendation of the Minister of Transport with terms of office ranging from one to five years.

Board of Examiners for Dominion Land Surveyors. Established under the Canada Lands Survey Act (RSC 1952, c.26), the Board examines candidates: for admission as articulated pupils; for commissions as Dominion Land Surveyors; or for certificates as Dominion Topographical Surveyors. It is also responsible for the discipline of Dominion Land Surveyors. The Board has three members appointed by the Governor in Council, one of whom, the chairman, is the Surveyor General of Canada; it is part of the Department of Energy, Mines and Resources.

Bureau of Pensions Advocates. The Bureau was established under the Minister of Veterans Affairs by the amendments to the Pension Act 1971 (SC 1970-71, c.31). It is not part of the Department of Veterans Affairs, but provides an independent professional legal aid service to applicants for awards under the Pension Act. The Bureau's head office is in Ottawa; there are district offices in major centres across Canada.

Canada Council. The Council was established by Order in Council dated April 15, 1957, under the terms of the Canada Council Act (RSC 1970, c.C-2) assented to March 28, 1957. It is composed of a chairman, a vice-chairman and 19 other members, a director and an associate director. The function of the Council is to encourage the arts, humanities and social sciences in Canada, mainly through a broad program of fellowships and grants. Its principal sources of income are an annual grant from the government, which amounted to \$32.1 million for the year ended March 31, 1973, and an Endowment Fund, originally of \$50 million, which has an annual yield of approximately \$5 million. In the making, managing and disposing of investments under the Act, the Council has the advice of an investment committee of five, including the chairman and another member of the Council. The proceedings of the Council are reported each year to Parliament through the Secretary of State.

Canada Deposit Insurance Corporation. The Corporation was established by legislation (RSC 1970, c.C-3), which received Royal Assent on February 17, 1967. It is empowered to insure Canadian currency deposits other than those belonging to the Government of Canada, up to \$20,000 per person, in banks, federally incorporated trust and loan companies that accept deposits from the public, and in similar provin-

cially incorporated institutions that are authorized by their provincial governments to apply for such insurance. The Corporation is also empowered to act as a lender of last resort for member institutions. The board of the Corporation comprises a chairman, appointed by the Governor in Council, and four other directors who hold the positions of Governor of the Bank of Canada, Deputy Minister of Finance, Superintendent of Insurance and Inspector General of Banks. It reports to Parliament through the Minister of Finance.

Canada Development Corporation. The Corporation was established in 1971 by the Canada Development Corporation Act (SC 1970-71, c.49) to develop and maintain strong Canadian controlled and managed corporations in the private sector of the economy and to give Canadians greater opportunities to invest and participate in the economic development of Canada. Its affairs are administered by a board of 21 directors. The authorized capital of the Corporation consists of 200 million common shares without par value and \$1,000 million in preferred shares. At the end of 1973, 25.7 million common shares had been issued.

During 1972 the Corporation acquired all the shares of Polysar Limited and a 35% interest in Venturtek International Limited. In 1973 the Corporation acquired 30.5% of the shares of Texasgulf Inc. and formed Connlab Holdings Limited, which in turn owns 100% of Connaught Laboratories Limited, 75% of A/S Dumex, 70% of Omnimed Inc. and 70% of Raylo Chemicals Limited. Also in 1973 the Corporation was instrumental in the formation of two new venture capital companies, Ventures West Capital Ltd. and Innocan Investments Ltd. of which it owns 49% and 40%, respectively. The Corporation is also a participant in the Gas-Arctic Northwest Project Study Group. The Corporation is not an agency of the Crown and is not subject to the provisions of the Financial Administration Act. As at December 31, 1973 consolidated assets amounted to \$701.5 million and the shareholders' equity \$344.4 million. Revenue for the year ended on that date totalled \$296.7 million and the net income \$18.7 million.

Canada Labour Relations Board. Established under the authority of the Canada Labour Code Part V (RSC 1970, c.L-1), the Canada Labour Relations Board administers provisions of the code with respect to workers in industries under federal jurisdiction. The Board consists of a chairman, a vice-chairman, an additional vice-chairman where considered advisable by the Governor in Council and not less than four or more than eight other members.

Canada Manpower and Immigration Council. Operating under RSC 1970, c.C-4, the Canada Manpower and Immigration Council consists of a chairman and not more than 15 members appointed by the Governor in Council. The Council advises the Minister of Manpower and Immigration on all matters pertaining to the effective utilization and development of manpower resources in Canada, including immigrants to Canada and their adjustment to Canadian life.

Canadian Arsenals Limited. The principal function of this Crown corporation is to operate the government owned facilities for the production of certain defence materiel. It was established under the Companies Act by Letters Patent dated September 20, 1945, and is subject to the Government Companies Operation Act (RSC 1970, c.G-7) and certain provisions of the Financial Administration Act (RSC 1970, c.F-10). It reports to Parliament through the Minister of Supply and Services.

Canadian Broadcasting Corporation. The CBC was established by Act of Parliament in 1936, replacing an earlier public broadcasting agency, the Canadian Radio Broadcasting Commission, created in 1932. The Broadcasting Act of 1968 (RSC 1970, c.B-11) describes the CBC as "established by Parliament for the purpose of providing the national broadcasting service".

The Corporation has a president and 14 other directors appointed by the Governor in Council. The president is the chief executive officer. The executive vice-president is appointed by the Corporation on the recommendation of the president and with the approval of the Governor in Council. He is responsible to the president for the management of broadcasting operations in accordance with policies prescribed by the Corporation.

CBC operations are financed by public funds voted annually by Parliament, with supplementary revenue obtained from commercial advertising. The CBC's accounts are audited annually by the Auditor General of Canada and the Corporation reports to Parliament through the Secretary of State of Canada.

Canadian Commercial Corporation. Established in 1946 by Act of Parliament (RSC 1970, c.C-6), the Canadian Commercial Corporation is wholly owned by the Government of Canada. Initially it assumed the undertaking of the (then) Canadian Export Board covering procurement in Canada of goods and services on behalf of foreign governments and United Nations relief agencies. In 1947 responsibility for procurement of the requirements of the Department of National Defence was transferred from the Department of Reconstruction and Supply to the Corporation which fulfilled these additional functions until the formation of the Department of Defence Production in 1951. In 1963 the staff of the Corporation was integrated with that of the Department of Defence Production, now part of the Department of Supply and Services, which provides all the management and services required by the Corporation.

The Corporation continues to act primarily as the Canadian government contracting and procurement agency on behalf of foreign countries purchasing defence or other supplies and services from Canada on a

government-to-government basis. It is also in a position to assist persons in Canada to obtain goods and commodities from outside Canada and to dispose of goods and commodities that are available for export from Canada. It reports to Parliament through the Minister of Supply and Services.

Canadian Consumer Council. The Council was established in 1968 (RSC 1970, c.C-27) to advise the Minister of Consumer and Corporate Affairs on all facets of consumerism. It meets with the Minister several times a year and consists of 31 members representing all segments of the population and all areas of Canada.

Canadian Dairy Commission. This Commission, which reports to Parliament through the Minister of Agriculture, was established on December 2, 1966 (RSC 1970, c.C-7) to provide efficient producers of milk and cream with the opportunity of obtaining a fair return for their labour and investment and thus ensure that consumers of dairy products would have a continuous and adequate supply of dairy products of high quality. The Commission consists of three members appointed by the Governor in Council and operates with the advice of a nine-member consultative committee appointed by the Minister.

Canadian Film Development Corporation. This Corporation, established by Act of Parliament in March 1967 (RSC 1970, c.C-8), fosters and promotes the development of a feature film industry in Canada through investment in productions, loans to producers, awards for outstanding accomplishments, and advice and assistance in distribution and administrative matters. It works in co-operation with other federal departments and agencies and with provincial departments and agencies having like interests and finances its operations from a film development advance account in the Consolidated Revenue Fund. The Corporation consists of the Government Film Commissioner (ex officio) and six other members appointed by the Governor in Council for terms of five years. The Corporation reports to Parliament through the Secretary of State.

Canadian Government Specifications Board. Created in 1934 under the authority of the National Research Council Act (RSC 1970, c.N-14) as the Canadian "Government Purchasing Standards Committee", this interdepartmental agency's name was changed in 1948 to the Canadian Government Specifications Board (CGSB).

In 1965, responsibility for the CGSB's operation was transferred by Order in Council to the Department of Defence Production, now part of the Department of Supply and Services. Membership of the Board was then revised to include the Secretary of the Treasury Board, the President of the National Research Council, and the Deputy Ministers of Consumer and Corporate Affairs, National Defence, Public Works, Supply and Services, Transport, and Industry, Trade and Commerce. The Deputy Minister of Supply was designated Chairman of the Board.

The role of the CGSB has expanded to provide standards in support of government programs in procurement, consumer requirements, legislation, technical practices, test procedures and international standardization in more than a hundred fields, many of which are of national interest. It has compiled more than 1,700 standards which are available in both official languages. The technical process of developing and revising standards is performed by some 300 committees and more than 3,000 competent members representing the interests of government, industry, research and testing agencies, and consumers. The Board works closely with the Standards Council of Canada and is accredited by the Council as a national standards writing organization.

Canadian Grain Commission. The Canada Grain Act (SC 1970-71, c.7) came into force on April 1, 1971, repealing the Canada Grain Act, 1930 (RSC 1952, c.25) and replacing the former Board of Grain Commissioners for Canada. The new Commission reports to Parliament through the Minister of Agriculture, as did the Board, and the responsibilities are unchanged. The Commission provides general supervision over the physical handling of grain in Canada by licensing elevators and elevator operators, by inspecting, grading and weighing grain received at and shipped from terminal elevators, and by other services associated with regulating the grain industry. It manages and operates the six Canadian government elevators in western Canada.

The Commission consists of a chief commissioner and two commissioners. Its objects are, in the interests of grain producers, to establish and maintain standards of quality for Canadian grain, to ensure a dependable commodity for domestic and export markets and to regulate grain handling in Canada. It has authority to conduct investigations and hold hearings on matters coming within its purview, and to undertake, sponsor and promote research in relation to grain and grain products. The Commission is part of the Canada Department of Agriculture, but submits a separate report to the Minister.

Canadian International Development Agency. The operation of Canada's international development programs are the responsibility of the Canadian International Development Agency. CIDA was originally established by Order in Council PC 1960-1476 and until 1968 was known as the External Aid Office. The Agency is under the direction of a President and a governing body — the Canadian International Development Board — and reports to Parliament through the Secretary of State for External Affairs.

Canadian International Development Board. The Board is the governing council responsible for directing the operations of the Canadian International Development Agency (CIDA). It is made up of the Under Secretary of State for External Affairs, the Deputy Ministers of the Department of Finance and the Department of Industry, Trade and Commerce, the Governor of the Bank of Canada and the Secretary of the Treasury. It meets under the chairmanship of CIDA's President.

Canadian Livestock Feed Board. This Board is a Crown corporation reporting to Parliament through the Minister of Agriculture. Established under the Livestock Feed Assistance Act in 1967, its objectives are to ensure: (a) the availability of feed grain in eastern Canada and British Columbia, (b) the availability of adequate storage space in eastern Canada, and (c) the reasonable stability and fair equalization of feed grain prices in eastern Canada and in British Columbia. The Board administers the Feed Freight Equalization Program under which a portion of the costs of transportation of feed grains is paid. The Act also stipulates that it is the duty of the Board to make a continuing study of feed grain requirements and availability in these areas, as well as to study and make recommendations to the Minister with respect to requirements for additional feed grain storage facilities in eastern Canada. It is also the duty of the Board to advise the government on all matters pertaining to the stabilization and fair equalization of feed grain prices to livestock feeders and, to the greatest extent possible consistent with its objectives, to consult and co-operate with all departments, branches or other agencies of the Government of Canada or any province having duties, aims or objects related to those of the Board.

In pursuit of its objectives, the Board may also buy, transport, store and sell feed grains in eastern Canada and British Columbia when authorized to do so by the Governor in Council. The Board is composed of four active members with headquarters in Montreal and branch offices in Ottawa and Vancouver. A seven-member Advisory Committee, appointed by the Governor in Council, and representing livestock feeders in eastern Canada and British Columbia, meets periodically with the Board to review and discuss all aspects of feed grain supplies and prices, and policies related thereto. This Committee may make recommendations to the Minister and the Board.

Canadian National Railways. The Canadian National Railway Company was incorporated to operate and manage a national system of railways, including the Canadian Northern Railway System, the Canadian Government Railways and all lines entrusted to it by Order in Council. Its operations are now governed by RSC 1970, c.C-10. In 1923 the Grand Trunk Railway Company of Canada was amalgamated with the Canadian National Railway Company and since 1923 a number of railway lines acquired by the government have been entrusted to the Company for operation and management, including the Newfoundland Railway and steamship services in 1949, the Témiscouata Railway in 1950, and the Hudson Bay Railway and the Northwest Communication System in 1958. The Canadian National Railways Act, 1919 was repealed in 1955 and the Canadian National Railways Act (SC 1955, c.29) substituted therefor. The Canadian National Railway Company is controlled by a chairman and board of directors appointed by the Governor in Council, who report to Parliament through the Minister of Transport.

Canadian Overseas Telecommunication Corporation (COTC). Created in 1950 by Act of Parliament (RSC 1970, c.C-11), this Crown corporation operates all overseas communications to and from Canada — whether by radio, undersea cable or international satellite. By means of international gateway switching-centres in Montreal, Toronto and Vancouver, COTC provides public telephone service to over 200 overseas territories. The Corporation also provides public message telegraph service, Telex and private wire service to many overseas points. COTC is the designated operating entity for Canadian participation in Intelsat and represents Canada on the Commonwealth Telecommunications Council. It reports to Parliament through the Minister of Communications.

Canadian Patents and Development Limited (CPDL). This Crown corporation was set up in 1947 under an amendment to the National Research Council Act passed in 1946. The purpose of the company, which is a subsidiary of the National Research Council, is to patent and license new products and processes that come out of NRC research, research of other government departments and agencies, and research of Canadian universities. Proposals for patents are assessed with regard to originality, existence of similar patented products or processes, commercial appeal, humanitarian or scientific value, and cost of developing, promoting and marketing. CPDL initiates and finances the development of many inventions to a stage where it is economically possible for private industry to carry them through to production and sale, thus bridging the gap between research and industry. Profits from inventions are used to sponsor less profitable but often more beneficial inventions, such as highly specialized surgical or scientific instruments. The company, whose head office is located in Ottawa, reports to Parliament through a designated Minister, at present the President of the Treasury Board.

Canadian Penitentiary Service. The Penitentiary Service operates under the Penitentiary Act (RSC 1970, c.P-6) and is under the jurisdiction of the Solicitor General of Canada. It is responsible for all federal penitentiaries and for the care and training of persons sentenced or committed to those institutions. The Commissioner of Penitentiaries, under the direction of the Solicitor General, has control and management of the Service and all matters connected therewith.

Canadian Pension Commission. This Commission, established in 1933 by amendments to the Pension Act (RSC 1970, c.P-7), replaced the Board of Pension Commissioners, the first organization created to deal solely with war pensions for service in Canada's Armed Forces. The Commission's main function is the administration of the Pension Act under which it adjudicates on all claims for pensions in respect of disability or death arising out of service in Canada's Armed Forces; and Parts I to X and Part XII of the Civilian War Pensions and Allowances Act, which provide for the payment of pensions in respect of death or disability arising out of civilian service directly related to the prosecution of World War II. It also adjudicates on claims for pension under various other measures, authorizes and pays monetary grants accompanying certain gallantry awards bestowed on members of the Armed Forces and administers various trust funds established by private individuals for the benefit of veterans and their dependents. The Commission consists of eight to 14 commissioners and up to 10 ad hoc commissioners appointed by the Governor in Council. Its chairman has the rank of a Deputy Minister and it reports to Parliament through the Minister of Veterans Affairs.

Canadian Permanent Committee on Geographical Names. This Committee deals with all questions of geographical nomenclature affecting Canada and undertakes research and investigation into the origin and usage of geographical names. Its membership includes representatives of federal mapping agencies and other federal offices concerned with nomenclature and a representative appointed by each province. The Committee is administered by the Department of Energy, Mines and Resources.

Canadian Radio-Television Commission (CRTC). This Commission, established under the provisions of the Broadcasting Act, 1967-68 (RSC 1970, c.B-11), regulates and supervises all aspects of the Canadian broadcasting system. The executive committee, after consultation with the part-time members in attendance at a Commission meeting, may issue broadcasting licences or renewal licences for such terms, not exceeding five years and subject to such conditions related to the circumstances of the licensee, as the executive committee deems appropriate for the implementation of the broadcasting policy enunciated in Section 3 of the Broadcasting Act. Under the same circumstances, the executive committee may, on application by a licensee, amend any conditions of a broadcasting licence already issued. The Commission usually holds public hearings in connection with issuing, suspending, etc. licences.

The CRTC consists of five full-time members and 10 part-time members chosen regionally and appointed by the Governor in Council. It reports to Parliament through the Minister of Communications.

Canadian Saltfish Corporation. The Canadian Saltfish Corporation was established under the Saltfish Act (SC 1969-70, c.32) and became operative on May 4, 1970. Its main purpose is to improve the earnings of fishermen and of other primary producers of salt-cured fish, through the production or purchase, processing and marketing of salt cod from participating provinces.

The Corporation, with head office at St. John's, Nfld., consists of a board of directors composed of a chairman, whose office is in Ottawa, a president who is general manager, one director for each participating province and not more than five other directors, all of whom are appointed by the Governor in Council. It is assisted by an advisory committee of 15 members, also appointed by the Governor in Council, at least half of whom are fishermen or representatives of fishermen. The limit of the Corporation's financial obligations is \$10 million and the Corporation is required to operate without grant appropriation from Parliament. It is empowered to distribute excess of income over expenses to participating fishermen and other primary producers. The Corporation reports to Parliament through the Minister of State (Fisheries).

Canadian Transport Commission. The Canadian Transport Commission, a court of record created in 1967 by the National Transportation Act (RSC 1970, c.N-17), took over powers formerly vested in the Board of Transport Commissioners, the Air Transport Board and the Canadian Maritime Commission, giving it regulatory and judicial functions with respect to almost all aspects of railway, commercial air, merchant marine, telecommunication and commodity pipeline services. The Act also provides for the regulation of extra-provincial motor vehicle transport but the applicable parts of the Act were not yet in effect as at December 1973. In addition, the Commission is responsible for undertaking studies and research into the economic aspects of all modes of transport within, into or from Canada.

Six committees perform the Commission's regulatory duties under the Act: the Railway Transport Committee; the Air Transport Committee; the Water Transport Committee; the Telecommunication Committee; the Motor Vehicle Transport Committee; and the Commodity Pipeline Transport Committee.

The Commission consists of not more than 17 members, of whom one is president and two are vice-presidents, appointed by the Governor in Council for a maximum of 10 years; it reports to Parliament through the Minister of Transport in respect of transportation matters, and through the Minister of Communications in respect of telecommunications matters.

Canadian Wheat Board. The Board was incorporated in 1935 under the Canadian Wheat Board Act (RSC 1970, c.C-12) to market, in an orderly manner, in the interprovincial and export trade, grain grown in Canada. Its powers include authority to buy, take delivery of, store, transfer, sell, ship or otherwise dispose of grain. Except as directed by the Governor in Council, the Board was not originally authorized to buy grain other than wheat but, since August 1, 1949, it may also buy oats and barley if authorized to do so by

Regulation approved by the Governor in Council. Only grain produced in the designated area, which includes Manitoba, Saskatchewan, Alberta and parts of British Columbia is purchased by the Board, which controls the delivery of grain into elevators and railway cars in that area as well as the interprovincial movement and export of wheat, oats and barley generally. The Board reports to Parliament through a designated Minister, at present the Minister of Justice.

Cape Breton Development Corporation. This Corporation was created by an Act of Parliament, assented to on July 7, 1967 (RSC 1970, c.C-13) and came into existence by proclamation on October 1, 1967, as a proprietary Crown corporation. The Corporation was established to rationalize the coal industry of Cape Breton Island and to broaden the base of the area's economy by assisting the financing and development of industry to provide employment outside the coal mines.

The Cape Breton Development Corporation acquired the former interests of the major coal producer in the Sydney coalfield and is operating three of those mines and developing one new mine. It is actively engaged in development of the tourist industry as well as primary products and various secondary industries.

The Act provides for a board of directors, comprising a chairman, a president and five other directors. Head office is located in Sydney, NS. The Corporation reports to Parliament through the Minister of Regional Economic Expansion. Its operations are financed by the Government of Canada.

Central Mortgage and Housing Corporation. This Crown agency was incorporated by Act of Parliament (RSC 1952, c.46) in December 1945 to administer the National Housing Acts. Under the National Housing 1954 Act (RSC 1970, c.C-16), the Corporation insures mortgage loans made by approved lenders for new and existing housing and makes direct loans in resource communities and rural areas; guarantees home improvement loans made by banks; undertakes subsidized rental housing projects and land assembly developments under federal-provincial arrangements; offers loans and subsidies for public housing projects; makes loans for land assembly projects to be used for general residential development; makes loans to individuals or organizations for low-rental housing projects; makes loans for student housing and to provinces and municipalities with provincial concurrence for sewage treatment projects designed to eliminate water and soil pollution; makes contributions and loans to provinces and municipalities for urban renewal operations; conducts housing research; encourages urban planning; and owns and manages rental housing units including those built for war workers and veterans. The Corporation arranges for and supervises construction of housing projects on behalf of the Department of National Defence and other government departments and agencies. It is responsible to Parliament through the Minister of State for Urban Affairs.

Columbia River Treaty Permanent Engineering Board. The Permanent Engineering Board, consisting of two Canadians and two Americans, was established under Article XV of the 1964 Columbia River Treaty between Canada and the United States. The Board assembles records and inspects and reports at least annually on matters within the scope of the Treaty. It reports to Parliament through the Minister of Energy, Mines and Resources.

Commissioner of Official Languages. Appointed by Parliament pursuant to the Official Languages Act (RSC 1970, c.O-2), the Commissioner holds office for a term of seven years, renewable until age 65. He is responsible to Parliament for ensuring recognition of the equal status of French and English as Canada's official languages and for ensuring compliance with the spirit and intent of the Act in all the institutions of the Parliament and Government of Canada. To this end, the Commissioner is empowered to receive and investigate complaints from the public, and, on his own initiative, to conduct investigations into possible violations of the Act. The results of investigations must be communicated to the complainants and the institutions concerned and may, at the Commissioner's discretion, be the subject of a special report to Parliament. The Commissioner reports annually to Parliament on the conduct of his Office and may make recommendations for changes in the Act as he deems necessary or desirable.

Commonwealth War Graves Commission. The Commission operates under the Original Charter of Incorporation dated May 21, 1917 and the new Supplemental Charter dated June 8, 1964. Under these the Commission is entrusted with the marking and maintaining in perpetuity of the graves of those of the British Empire and Commonwealth Armed Forces who died during World Wars I and II. The Canadian High Commissioner in London, England is the official Commission member for Canada and the Minister of Veterans Affairs is the Agent of the Commission in Canada.

Company of Young Canadians. Established in 1966 as a Crown corporation (RSC 1970, c.C-26), the Company of Young Canadians is a collection of full-time volunteers between the ages of 18 and 28 who work with community groups on projects concerned with agriculture, co-operatives (credit unions, housing, consumer and vegetable production), tenants, urban planning and native projects. The volunteers receive training and a monthly living allowance from the CYC and are chosen directly by the community group seeking CYC support along with the local CYC field staff. The volunteer's prime responsibility is to this community reference group. CYC field staff are located in every province and in the Yukon Territory and Northwest Territories to assist groups in developing projects and in the training of volunteers.

Both the CYC's nine-member administrative Council and the Executive Director, who is responsible for supervision and management of the Company, are appointed by the Governor in Council. The Company reports to Parliament through the Secretary of State.

Copyright Appeal Board. The Board was established to provide an agency to which people using copyrighted music could direct appeals against the fees proposed by Performing Rights Societies for the use of the music. The Copyright Act (RSC 1970, c.C-30) empowers the Board to deal only with the amount of the fees that the Societies propose to collect for an ensuing calendar year. It has no authority to draft the tariffs or terms and conditions of the tariffs. Hearings before the Board are conducted in a quasi-judicial manner. After considering an appeal the Board makes such alterations to the proposed statements of fees as it thinks appropriate and transmits the statements thus altered or revised or unchanged to the Minister of Consumer and Corporate Affairs. The decision of the Board is final and binding. The Copyright Appeal Board consists of three members appointed by the Governor in Council, one of whom, as chairman, must hold or have held high judicial office.

Court Martial Appeal Court. This Court was established as a superior court of record pursuant to section 201 of the National Defence Act (RSC 1970, c.N-4). Accused persons found guilty by a court martial have the right to direct an appeal to the Court Martial Appeal Court in respect of the legality of any or all of the findings, or the legality of the whole or any part of the sentence. The Appeal Court is composed of not fewer than four judges of the Federal Court of Canada designated by the Governor in Council and such additional judges of a superior court of criminal jurisdiction as are appointed by the Governor in Council. One judge has been designated by the Governor in Council as the President. Appeals are heard by a minimum of three judges. The Court Martial Appeal Court may sit and hear appeals at any place under direction of the President. An appellant whose appeal has been wholly or partially dismissed by the Court Martial Appeal Court may, under certain circumstances, appeal to the Supreme Court of Canada; where the Court Martial Appeal Court has wholly or partially allowed an appeal, the Minister of National Defence may similarly enter an appeal to the Supreme Court of Canada.

Crown Assets Disposal Corporation. This Corporation was established in 1944 as the War Assets Corporation under the Surplus Crown Assets Act (RSC 1970, c.S-20) and is subject to the Financial Administration Act (RSC 1970, c.F-10). Its name was changed to Crown Assets Disposal Corporation in 1949. The Corporation is responsible for the sale of federal government surplus real estate and commodities located in Canada and at Canadian government establishments throughout the world. It also acts as agent on behalf of foreign governments in selling their surplus assets located in Canada and has reciprocal agreements with a number of European countries for marketing Canadian surplus assets located abroad. While the Corporation's normal method of sale is to invite written offers, on occasion it sells by public auction. Regional offices are maintained in Halifax, Montreal, Toronto, Edmonton and Vancouver. The Corporation is responsible to Parliament through the Minister of Supply and Services.

Defence Construction (1951) Limited. This is the Crown agency that procures for the Department of National Defence the construction and repair of buildings, structures and engineering works and professional engineering and architectural services. It reports to the Minister of National Defence.

The forerunner of the present company, Defence Construction Limited, began operation in November 1950 as a Crown agency responsible for awarding and supervising defence construction projects. Defence Construction (1951) Limited, incorporated July 12, 1951, under authority of the Defence Production Act, took over the responsibilities of the former agency.

The company's responsibilities in contracting for all new construction and repair and renovation projects (except contracts under \$10,000 which are arranged for the Department of National Defence via the Department of Supply and Services) include: participation in preparation of design; calling and reviewing of tenders; award and administration of contracts; supervision of construction work; and certification of progress claims for work completed. Activities cover four distinct spheres: defence projects in Canada for the Department of National Defence; all defence projects in Europe for the Department of National Defence under the North Atlantic Treaty Organization Agreement; defence construction for the United States government in Canada; and, by arrangement, acting as the contract agents or technical advisers on the rendering of assistance to other federal departments and agencies.

The head office of the agency is located at Ottawa and branch offices are maintained at Halifax, Montreal, Toronto, Winnipeg and Vancouver in Canada and in Lahr, Federal Republic of Germany.

Defence Research Board. The Defence Research Board, established in 1947 by an amendment to the National Defence Act (RSC 1970, c.N-4), is concerned with providing scientific advice to the Minister of National Defence, meeting the research requirements of the Canadian Armed Forces, and supporting research of defence interest in Canadian universities and applied research in those industries that require a defence science and technology input. The Board consists of a full-time chairman, a vice-chairman, and a varying number of members appointed by the Governor in Council for three-year terms. The Deputy Minister of National Defence, the President of the National Research Council and three senior officers of the Canadian Armed Forces are ex officio members. The Board has its headquarters in Ottawa, research estab-

lishments in Nova Scotia, Quebec, Ontario, Alberta and British Columbia and liaison offices in Washington, London and Paris.

Department of Agriculture. This Department was established in 1867 (SC 1868, c.53) and now operates under authority of RSC 1970, c.A-10. It undertakes work on all phases of agriculture. Research and experimentation are carried out by the Research, Health of Animals and Economics branches, and the Grain Research Laboratory; and the maintenance of standards and protection of products, by the Production and Marketing and Health of Animals branches. A new Food Systems Branch was created in 1972. The Canada Grain Act, as it pertains to the inspection, weighing, storage and transportation of grain, is administered by the Canadian Grain Commission, which is a part of the Department. Programs concerning farm income security and price stability are provided under the Crop Insurance Act, the Prairie Farm Assistance Act, the Canadian Dairy Commission Act, the Agricultural Stabilization Act and the Agricultural Products Board Act. The Agricultural Stabilization Board, the Agricultural Products Board, the Farm Credit Corporation, the Canadian Dairy Commission, the Canadian Livestock Feed Board and the National Farm Products Marketing Council report to Parliament through the Minister of Agriculture.

Department of Communications. The Department was established under Part II of the 1969 Government Organization Act and operates under authority of the Department of Communications Act (RSC 1970, c.C-24). The Minister of Communications is responsible for fostering the orderly operation and development of communications for Canada. This includes recommending national policies and programs regarding communications services for Canada, promoting the efficiency and growth of Canadian communications systems and assisting them to adjust to changing conditions and encouraging the development and introduction of new communication facilities and resources. Its responsibilities also include managing the radio frequency spectrum to permit the orderly use of radio communications, protecting Canadian interests in international telecommunications matters, and co-ordinating telecommunications services for departments and agencies of the Government of Canada.

The Canadian Overseas Telecommunication Corporation, the Canadian Radio-Television Commission and Telesat Canada report to Parliament through the Minister of Communications. The Canadian Transport Commission also reports through the Minister of Communications on matters pertaining to telecommunications.

Department of Consumer and Corporate Affairs. This Department was established in 1967 (RSC 1970, c.C-27) replacing the Department of the Registrar General of Canada. The duties, powers and functions of the Minister extend to and include all matters over which the Parliament of Canada has jurisdiction, not by law assigned to any other department, branch or agency of the Government of Canada, relating to: consumer affairs; corporations and corporate securities; combines, mergers, monopolies and restraint of trade; bankruptcies and insolvencies; and patents, copyrights, trade marks and industrial design.

The functions of the Department are divided into five main areas. The Bureau of Consumer Affairs co-ordinates government activities in the field of consumer affairs; the Bureau of Corporate Affairs administers the government's corporate activities; the Bureau of Intellectual Property administers laws and regulations pertaining to patents, trade marks, industrial designs and copyrights; and the Field Operations Service supervises the Department's operations across Canada, staffing regional and district offices in five Canadian cities from coast to coast and district offices in 25 others. Competition policy is regulated by the Bureau of Competition Policy.

In addition, as Registrar General of Canada, the Minister of Consumer and Corporate Affairs is the custodian of the Great Seal of Canada, the Privy Seal of the Governor General, the Seal of the Administrator of Canada and the Seal of the Registrar General of Canada.

The Restrictive Trade Practices Commission (Combines Investigation Act) is domiciled in the Department and reports directly to the Minister.

Department of Energy, Mines and Resources. The Department of Energy, Mines and Resources was created in 1966 by the Government Organization Act (RSC 1970, c.E-6). The Department, in addition to its administrative services, is organized into three sectors. The Energy Development Sector has responsibilities relating to the development of plans and policies for all forms of energy, the development of programs, legislation and agreements to implement those policies, the direction of studies relating to energy sources and requirements, and the co-ordination of policy advice. A major responsibility of the Sector is research on and the formulation of a national energy policy. The Mineral Development Sector gathers economic data on non-renewable resources for use by government, industry and the public. It also develops policy proposals for the government and the Canadian mineral industry to help determine policies and decisions that will ensure an adequate, dependable and timely flow of minerals to meet the country's needs at reasonable cost. The Science and Technology Sector includes the Geological Survey of Canada, the Mines Branch, the Surveys and Mapping Branch, the Earth Physics Branch, the Canada Centre for Remote Sensing and the Polar Continental Shelf Project, all of which are engaged in research and the provision of information, and the Explosives Division, which controls, under the provisions of the Explosives Act, the production and handling of explosives.

Atomic Energy of Canada Limited, Eldorado Nuclear Limited, Eldorado Aviation Limited, the

Atomic Energy Control Board, the National Energy Board, and the Interprovincial Boundary Commissions report to Parliament through the Minister of Energy, Mines and Resources. Operationally the International Boundary Commission reports through the Minister of Energy, Mines and Resources; in dealing with its counterpart in the United States it is responsible to the Secretary of State for External Affairs.

Department of the Environment. Established by Act of Parliament in June 1971 (SC 1970-71, c.42), this Department carries the main federal responsibility for leading the attack on all forms of pollution and ensuring the proper management and development of Canada's resources. The Department is organized into two principal components: Fisheries and Marine Services and Environmental Services. Each component is headed by a senior Assistant Deputy Minister. The responsibilities of the Fisheries and Marine Services include hydrography and oceanography and administration of small craft harbours, as well as recreational, commercial and international aspects of fisheries research, development and operations in three oceans and in inland waters. Environmental Services is responsible for the Atmospheric Environment Service, the Environmental Protection Service and the Environmental Management Service.

The Atmospheric Environment Service is responsible for the acquisition and processing of data and the provision of climatological and meteorological information. The Service maintains a national system to provide weather forecasts and current weather information to the general public, aviation and special users. This organization carries out research on air quality and environmental matters, and research to support the weather observing and forecasting system.

The Environmental Protection Service develops and enforces environmental protection regulations, standards, protocols and other protection and control instruments used to implement federal environment legislation. It also provides information for other federal departments administering the legislation under which environmental regulations are to be developed. The Service develops national effluent and emission standards in consultation with the provinces and industry and is the public's point of contact within the Department on problems relating to the protection of the environment.

The Environmental Management Service was established to co-ordinate activities concerning inland renewable resources, their use and the impact of their use on the environment. It is composed of four directorates — Inland Waters, Forestry, Wildlife and Lands — responsible for providing data on the quantity and quality of the resources, for research into the methodologies and techniques of conservation, and for planning the use of renewable resource utilization on a national basis, as provided for in federal legislation. This Service also administers the Environmental Assessment Panel which reviews the environmental assessments required for all federally sponsored projects.

Planning and Finance provides policy and planning advice, co-ordinates the government's relationships respecting environmental and resources matters with the provinces and other countries, develops and co-ordinates a comprehensive approach to departmental science policy and research activities, and co-ordinates information services for the Department.

The Environmental Advisory Council was set up to provide advice to the Minister on the state of the environment and threats to it, priorities for federal or joint federal/provincial government action, and the effectiveness of the Department's efforts to restore, preserve or enhance the quality of the environment. A Forestry Advisory Council and a Fisheries Advisory Council were established to report to the Minister on specific areas of responsibility relative to renewable resources. The advisory bodies review programs, assess impact and provide links with organizations outside government. The Councils include representatives from industry, the universities and the scientific community as well as the Department of the Environment.

Department of External Affairs. The main function of the Department of External Affairs, established in 1909 (RSC 1970, c.E-20), is the protection and advancement of Canadian interests abroad. The Minister responsible for the Department is the Secretary of State for External Affairs. The senior permanent officer (Deputy Minister) of the Department, the Under-Secretary of State for External Affairs, is assisted by an Associate Under-Secretary and by five Assistant Under-Secretaries and is advised by officers in charge of bureaus, offices and divisions. The directors-general or directors of these units are each responsible for a part of the Department's work and are assisted by foreign service officers, administrative services officers and specialists in various occupational groups, as well as by an administrative staff. Officers serving abroad are formally designated as High Commissioners, Ambassadors, Ministers, Counsellors, First Secretaries, Second Secretaries, Third Secretaries and Attachés at diplomatic posts and Consuls General, Consuls and Vice-Consuls at consular posts. Canada maintains approximately 177 diplomatic, consular and other missions, 63 of which are non-resident.

In Ottawa the work of the Department is conducted by four regional, seven functional and three administrative bureaus, in addition to a number of operational units performing staff or special functions. The four regional bureaus administer 12 geographical divisions, each of which is responsible for the countries that make up the region administered by the bureau to which it belongs: the European Affairs Bureau includes three divisions — Western Europe, Eastern Europe and Northwestern Europe including Britain; the Bureau of Asian and Pacific Affairs includes the East Asia, Pacific and South Asia Divisions; the Bureau of African and Middle Eastern Affairs, the African Affairs I, African Affairs II and Middle Eastern Divisions; and the Bureau of Western Hemisphere Affairs, the Caribbean (Commonwealth), Latin American and

United States of America Divisions. The seven functional bureaus include 20 divisions: the Bureau of Economic and Scientific Affairs comprises the Aid and Development, Commercial Policy, Scientific Relations and Environmental Problems, and Transport, Communications and Energy Divisions; the Bureau of Legal Affairs includes the Legal Advisory and Legal Operations Divisions; the Bureau of Consular Affairs, the Consular Operations, and Consular Policy and Research Divisions; the Bureau of Defence and Arms Control Affairs, the Arms Control and Disarmament, and Defence Relations Divisions; the Bureau of Public Affairs, the Academic Relations Service, Cultural Affairs, Historical, Information and World Exhibitions Program Divisions; the Bureau of Coordination, the Commonwealth Institutions, Federal-Provincial Coordination and Francophone Institutions Divisions; and the Bureau of United Nations Affairs, the United Nations Economic and Social Affairs and United Nations Political and Institutional Affairs Divisions. The four administrative bureaus are responsible respectively for Personnel, Finance and Administration, Communications and General Services, and Security and Intelligence Liaison. In addition, there is an Inspection Service, a Policy Analysis Group, an Operations Centre, a Central Staff, an Interdepartmental Committee on External Relations, a Special Adviser on Foreign Service appointments and related policies, a Chief Air Negotiator, an Adviser on Bilingualism and a Special Adviser on Media Communications.

The International Joint Commission reports to the Secretary of State for External Affairs of Canada as well as to the Secretary of State of the United States. The Secretary of State for External Affairs reports to Parliament for the Canadian International Development Agency.

Department of Finance. Created by Act of Parliament in 1869, this Department now operates under the Financial Administration Act (RSC 1970, c.F-10 as amended). It is primarily responsible for advising the government on the economic and financial affairs of Canada. The work of the Department is carried out in six branches. The Tax Policy and Federal-Provincial Relations Branch helps to form tax policy and maintain the tax structure. It deals with personal income and commodity taxes, taxes on corporations and Canada's international tax relations. Fiscal relations with the provinces are the responsibility of a Federal-Provincial Relations Division. The Branch also administers grants to municipalities in lieu of new taxes on government property and advises on the government's social development and manpower policies. The Economic Programs and Government Finance Branch is concerned with resource development, various government programs of broad economic development and the financing of Crown corporations and government agencies. The Tariffs, Trade and Aid Branch is concerned with trade policy and development, the Canadian aid program and customs' tariffs. The Economic Analysis, Fiscal Policy and International Finance Branch monitors the economy, analyzes the potential impact of various alternative courses for government fiscal policy and participates on Canada's behalf in a number of international organizations, including the International Monetary Fund. The Long Range Economic Planning Branch is responsible for co-ordinating, planning and developing medium- and long-term economic measures and policies. The Financial Operations Branch is responsible for monitoring developments in capital markets and advising on the government's debt operations. The Inspector General of Banks is an office of the Department. In addition, the following agencies report to Parliament through the Minister of Finance: The Anti-dumping Tribunal, the Bank of Canada, the Canada Deposit Insurance Corporation, the Industrial Development Bank, the Department of Insurance and the Tariff Board. The Minister of Finance acts as spokesman in Parliament for the Auditor General.

Department of Indian Affairs and Northern Development. The Department of Indian Affairs and Northern Development was established in June 1966, superseding the Department of Northern Affairs and National Resources; it now operates under authority of RSC 1970, c.I-7. In 1968 the Department was reorganized, creating, in addition to departmental support services and an Engineering and Architectural Branch, three distinct program areas. The Indian and Eskimo Affairs Program includes education, community affairs, economic development for Indians and Eskimos and Indian trust administration. The Northern Affairs Program covers the management of all natural resources north of the 60th parallel except game, the protection of the northern environment, government activities in the field of economic development and support of the territorial governments in providing social and other local services, and Parks Canada, which includes National Parks and Historic Sites and Parks.

The Commissioner of the Northwest Territories and the Commissioner of the Yukon Territory report to Parliament through the Minister of Indian Affairs and Northern Development. The Minister is also responsible to Parliament for the Northern Canada Power Commission, the National Battlefields Commission and the Historic Sites and Monuments Board of Canada.

Department of Industry, Trade and Commerce. In 1969, the Departments of Industry and of Trade and Commerce were merged to form the Department of Industry, Trade and Commerce (ITC), which operates under authority of RSC 1970, c.I-11. ITC promotes the establishment, growth and efficiency of manufacturing, processing and tourist industries in Canada and fosters the development of Canadian trade. The Department plans and carries out programs to assist manufacturing and processing industries in adapting to new technology and changing market conditions, in developing unrealized potential and in rationalizing productive facilities and corporate structures. It promotes product and process development, increased productivity, greater use of research, modern equipment, improved industrial design, the application of ad-

vanced technology and modern management techniques, and the development and application of sound industrial standards in Canada and in world trade.

In addition, the Department's functions include: improving access of Canadian goods and services into external markets through trade negotiations; contributing to the improvement of world trading conditions; providing support services for industrial and trade development, including information, import analysis and traffic services; analyzing the implications for Canadian industry, trade and commerce and for tourism of government policies related thereto in order to contribute to the formulation and review of those policies; and compiling and updating detailed information on trends and developments in Canada and abroad related to the manufacturing and processing and tourist industries.

The Department is organized into six major functional groups: Office of Tourism, Industry Development, Industrial Policies, Export Development, International Trade Relations and Administration. The Office of Tourism includes the Travel Industry Branch and the Canadian Government Travel Bureau. The Industry Development component is made up of nine Industry Development Branches which cover the major industry groupings in Canada: Aerospace, Marine and Rail; Agriculture, Fisheries and Food Products; Apparel and Textiles; Chemicals; Electrical and Electronics; Machinery; Materials; Mechanical Transport and Wood Products. The Industrial Policies segment includes the Office of Science and Technology, the Office of the Industrial Policy Adviser and the Office of Design. The Export Development section comprises Export Projects, Financing and Aid, Grains, Transportation and Trade Services, and Fairs and Missions. Reporting to the International Trade Relations sector is the Office of General Relations, the Office of Special Import Policy and the Office of Export/Import Permits. Administration is responsible for the areas of Finance, Personnel, Information Services and Program Analysis. In addition, the Department operates eight regional offices located across Canada and the Trade Commissioner Service which has 82 trade offices in 57 countries.

The Minister also reports to Parliament on behalf of Statistics Canada and the Export Development Corporation. Boards and other organizations reporting to the Minister are the General Adjustment Assistance Board, the Machinery and Equipment Advisory Board, the Pharmaceutical Industry Development Advisory Committee, the National Design Council, the Standards Council of Canada, the Textile and Clothing Board, the Preparatory Commission for Metric Conversion and the Minister's Advisory Council.

Department of Insurance. The Minister of Finance is responsible for the Department of Insurance which originated in 1875 as a branch of the Department of Finance but was constituted a separate Department in 1910. It is authorized and governed by the Department of Insurance Act (RSC 1970, c.I-17). Under the Superintendent of Insurance, who is the Deputy Head, the Department administers the statutes of Canada applicable to federally incorporated insurance, trust, loan and investment companies; provincially incorporated insurance companies registered with the Department; British and foreign insurance companies operating in Canada; small loans companies and money-lenders; co-operative credit societies registered under the Co-operative Credit Associations Act; pension plans organized and administered for the benefit of persons employed in connection with certain federal works, undertakings and businesses; and life insurance issued to certain members of the Public Service prior to May 1954.

Under the relevant provincial statutes, the Department examines trust and loan companies incorporated in Nova Scotia, trust companies incorporated in New Brunswick and insurance and trust companies incorporated in Manitoba. It reports to Parliament through the Minister of Finance.

Department of Justice. This Department, established by SC 1868, c.39, now operates under authority of the Department of Justice Act (RSC 1970, c.J-2). The Minister of Justice is the official legal adviser of the Governor General and the legal member of the Queen's Privy Council for Canada. It is his duty to see that the administration of public affairs is in accordance with law, to superintend all matters connected with the administration of justice in Canada that are not within the jurisdiction of the provincial governments, to advise upon the legislation and proceedings of the provincial legislatures, and generally to advise the Crown on all matters of law referred to him by the Crown. The Minister of Justice is, ex officio, Her Majesty's Attorney General of Canada. In this capacity it is his duty to advise the heads of the departments of the Government of Canada on all matters of law connected with such departments, to settle and approve all instruments issued under the Great Seal of Canada, and to regulate and conduct all litigation for or against the Crown in the right of Canada.

The Minister of Justice reports to Parliament for the Tax Review Board, the Law Reform Commission of Canada, and at present, is the designated Minister responsible for the Canadian Wheat Board.

Department of Labour. The Department of Labour was established in 1900 by Act of Parliament (SC 1900, c.24) and now operates under the authority of the Department of Labour Act (RSC 1970, c.L-2). The Department administers, under the Minister of Labour, legislation dealing with: fair employment practices; hours of work, minimum wages, annual vacations, holidays with pay, equal wages, group and individual terminations of employment, severance pay and the regulation of fair wages and hours of labour in contracts made with the Government of Canada for construction, remodelling, repair or demolition of any work; government employee compensation, merchant seamen compensation, and employment safety; and transitional assistance benefits for auto workers and adjustment assistance benefits for textile workers. It promotes joint consultation with industries through labour management committees and operates a

women's bureau. The Department publishes the Labour Gazette and other publications as well as general information on labour management, employment, manpower and related subjects.

The Merchant Seamen Compensation Board reports to the Minister of Labour. The Department is the official liaison agency between the Canadian government and the International Labour Organization. The Canada Labour Relations Board and Information Canada report to Parliament through the Minister of Labour.

Department of Manpower and Immigration. The Department of Manpower and Immigration, created under the provisions of the Government Organization Act 1966 and operating now under RSC 1970, c.M-1, has responsibility for the development and utilization of manpower resources in Canada, employment services and immigration. The Department is composed of three operational arms: Operations Canada; the Manpower and Immigration Divisions; and two support service divisions, Program Development and Administration. Operations Canada directs the activities of 390 Canada Manpower Centres and 95 Immigration Centres in Canada assisted and co-ordinated by regional offices in Halifax, Montreal, Toronto, Winnipeg and Vancouver. The Canada Manpower Division is responsible for counselling programs, manpower training and mobility programs, employer services and services for disadvantaged workers and students. The Canada Immigration Division administers the Immigration Act and Regulations and is responsible for the selection, examination, movement and admission of immigrants to Canada, and for the exclusion or deportation of undesirable persons. The Department maintains 58 immigration offices abroad. The Department's support branches include the Strategic Planning and Research Division which supplies development and evaluation research, and the Administration Division which provides financial and management services, and personnel and information services.

The Canada Manpower and Immigration Council, the Immigration Appeal Board and the Unemployment Insurance Commission report to Parliament through the Minister of Manpower and Immigration.

Department of National Defence. The Department of National Defence and the Canadian Forces operate under the authority of the National Defence Act (RSC 1970, c.N-4). The Minister of National Defence is responsible for the control and management of the Canadian Forces, the Defence Research Board and all matters relating to national defence. He is also responsible for the construction and maintenance of all defence establishments and facilities required for the defence of Canada.

The Deputy Minister is the senior public servant in the Department and the principal civilian adviser to the Minister on all departmental affairs. He is responsible for ensuring that all policy direction from the government is reflected in the administration of the Department and in military plans and operations. The Chief of the Defence Staff is the senior military adviser to the Minister and is charged with the control and administration of the Canadian Forces. He is responsible for the effective conduct of military operations and the readiness of the Canadian Forces to meet the commitments assigned to them by the government.

A Defence Council, consisting of the Minister of National Defence as chairman, the Deputy Minister of National Defence, the Chief of Defence Staff, the Chairman Defence Research Board, the Vice Chief of the Defence Staff, the Assistant Deputy Minister Policy, and the Deputy Chief of Defence Staff, meet as required to consider and advise on major policy matters. The Crown corporation Defence Construction (1951) Limited reports to Parliament through the Minister of National Defence.

Department of National Health and Welfare. This Department was established in October 1944 under the Department of National Health and Welfare Act (RSC 1970, c.N-9). An Administration Branch serves both the health and welfare branches. At present the Deputy Minister of Health administers five branches: Health Programs, Health Protection, Medical Services, Long Range Health Planning and Fitness and Amateur Sport. The Deputy Minister of Welfare administers seven branches: Income Security, International and Emergency Welfare, Social Allowances and Services, Canada Pension Plan, Policy Research and Long Range Planning, Policy and Program Development and Co-ordination, and Developmental Programs. The two Deputy Ministers are also involved in Canada's role in international health and welfare programs.

Departmental programs on health include hospital insurance and diagnostic services, medical care insurance, health resources, food and drug supervision, narcotics control, national health grants, federal emergency health services, environmental health, adverse drug reaction reporting, operation of a central clearing house for poison control centres, health, medical and hospital services to Indians and Eskimos across Canada and all residents of the Yukon Territory and Northwest Territories, government employee health services and leprosy control as well as assistance and consultation services to the provinces on request.

Welfare programs include the Canada Pension Plan, old age security and guaranteed income supplements, family and youth allowances, the Canada Assistance Plan and emergency welfare services. There are also developmental programs, including national welfare grants, family planning grants and information and grants to groups of retired persons under the New Horizons program.

The National Council of Welfare reports directly to the Minister who also reports to Parliament for the Medical Research Council.

Department of National Revenue. From Confederation until May 1918, customs and inland revenue Acts were administered by separate departments; after that date they were amalgamated under one Minister as the Department of Customs and Inland Revenue. In 1921 the name was changed to the Department of Customs and Excise. In April 1924 collection of income taxes was placed under the Minister of Customs and Excise and, under the Department of National Revenue Act, 1927, the Department became known as the Department of National Revenue. It operates now under RSC 1970, c.N-15.

The Customs and Excise Division of the Department is responsible for the assessment and collection of customs and excise duties as well as of sales and excise taxes. The Taxation Division is responsible for the assessment and collection of income taxes, old age security tax, Part I of the Canada Pension Plan, and collection of premiums and administration of the coverage provisions of the Unemployment Insurance Act through its 28 district taxation offices and the head office and Taxation Data Centre in Ottawa.

Department of Public Works. The Department of Public Works was constituted in 1867 and operates under the legislative authority of the Public Works Act (RSC 1970, c.P-38). It is responsible for the management and direction of the public works of Canada and, except as specifically provided in other Acts, attends to the construction and maintenance of public buildings, wharves, piers, roads and bridges and the undertaking of dredging and protection work. Federal government interest in the Trans-Canada Highway and the Northwest Highway System is also handled by the Department. The Department has six regional offices at Halifax, Montreal, Ottawa, Toronto, Edmonton and Vancouver. Subsidiary offices at other key points across the country are also maintained. Departmental organization includes the following major areas of operation: Realty; Design and Construction; Technological Research and Development; Special Projects, together with the Directorate of Public Relations and Information; the Senior Adviser, Finance and Management; the Senior Personnel Adviser; the Senior Policy Adviser and the Dominion Fire Commissioner.

Department of Regional Economic Expansion. This Department was established in 1969 (RSC 1970, c.R-4). Its function is to ensure that economic growth is dispersed widely enough across Canada to bring employment and earning opportunities in the slow-growth regions as close as possible to those in the other parts of the country, without interfering with a high over-all rate of national growth. The legislation authorizes the Department, in co-operation with provincial governments and other federal agencies, to prepare development plans and programs designed to meet the special needs of particular areas.

The Department has six major divisions, each under the control of an Assistant Deputy Minister: Planning and Co-ordination, Administration, and the Eastern, Quebec, Ontario and Western regional divisions. A major program provides development incentives to industry, in the form of cash grants, to encourage new productive employment in designated regions where such employment has been scarce. In 23 special areas, the Department is taking special action to encourage economic development and social adjustment. The Department is also responsible for programs under the Agricultural and Rural Development Act (ARDA); the Fund for Rural Economic Development (FRED); and the Prairie Farm Rehabilitation Act (PFRA) which is concerned with land-use adjustment, water development projects and the establishment of tree shelterbelts. An Atlantic Development Council advises the Minister on programs and policies for fostering economic development and social adjustment in the Atlantic region.

The Department has signed 10-year General Development Agreements with nine provinces (Prince Edward Island remains under FRED) to enable joint action to be initiated. Existing programs now are administered from regional offices at Moncton, Montreal, Toronto and Saskatoon.

The Minister of Regional Economic Expansion reports to Parliament for the Cape Breton Development Corporation, the New Brunswick Multiplex Corporation and the Canadian Council on Rural Development.

Department of the Secretary of State. The duties, powers and functions of the Secretary of State of Canada (RSC 1970, c.S-15) extend to and include all matters over which the Parliament of Canada has jurisdiction not by law assigned to any other department, branch or agency of the Government of Canada, relating to: citizenship; elections; State ceremonial, the conduct of State correspondence and the custody of State records and documents; the encouragement of the literary, visual and performing arts, learning and cultural activities; and libraries, archives, historical resources, museums, galleries, theatres, films and broadcasting.

The responsibilities of the Department of the Secretary of State include those pertaining to the administration of the following branches: Citizenship; Citizenship Registration; Education Support, Research and Liaison; Language Programs; Arts and Culture; State Protocol and Special Events; Social Action, Travel and Exchange; and Translation Bureau.

The Secretary of State reports to Parliament for the Canadian Film Development Corporation, the National Arts Centre Corporation, the National Film Board, the National Library, the Public Archives, the National Museums of Canada, the Canada Council, the Canadian Broadcasting Corporation, the Company of Young Canadians and the Public Service Commission and acts as spokesman for the Office of the Representation Commissioner. In addition, the Secretary of State is responsible for the financial and administrative affairs of the Bilingual Districts Advisory Board.

Department of the Solicitor General. Before 1936, the Office of the Solicitor General was either a Cabinet post or a Ministerial post outside the Cabinet. From 1936 to 1945 the position did not exist, the duties of the Office being wholly absorbed by the Attorney General of Canada. The Solicitor General Act, 1945 re-established the Solicitor General as a Cabinet officer and provided that "the Solicitor General shall assist the Minister of Justice in the Counsel work of the Department of Justice, and shall be charged with such other duties as are at any time assigned to him by the Governor-in-Council". This legislation was repealed in 1966 when a new Department of the Solicitor General was created (RSC 1970, c.S-12); the Solicitor General of Canada became the Cabinet Minister with primary responsibility in the fields of correction and law enforcement. He is responsible for the Royal Canadian Mounted Police and the Canadian Penitentiary Service and also reports to Parliament for the National Parole Board, which is an independent agency.

Department of Supply and Services. The Department of Supply and Services was established on April 1, 1969 (RSC 1970, c.S-18) and incorporates certain services previously provided by other departments, in line with the recommendations of the Royal Commission on Government Organization (Glassco Commission) which had stressed the need for the federal government to foster efficiency and effect economies wherever possible. The Minister of Supply and Services is also the Receiver General for Canada and exercises all the duties, powers and functions assigned to that office by law.

The Department is organized into two major administrations, each headed by a Deputy Minister directly responsible to the Minister. The Supply Administration administers the Supply Programme, the objective of which is to acquire and provide, at minimum cost, goods and services required by federal government departments and agencies. It also maintains federal government equipment and provides printing facilities. The Supply Administration has 13 regional or district supply offices across Canada; at various locations within these areas it provides purchasing and warehousing services and other services such as field contract administration, equipment maintenance, security, emergency supply planning, assets management and printing. The Overseas Region consists of two supply offices, one in London, England and the other in Koblenz, Federal Republic of Germany and one contract administration office in Washington, DC. The Supply Administration is organized into Commercial Supply Service, Science and Engineering Procurement Service and Corporate Management Service.

The Services Administration, acting for the Receiver General, provides payment or cheque-issuing services on behalf of all federal departments, maintains the fiscal accounts of Canada and prepares the public accounts. It offers departments and agencies a broad range of management and advisory services in management consulting, auditing and computer services fields. It also provides administrative services for all departments in connection with pay, pensions and other employee benefit plans, together with financial management reports and statistical information related to its cheque-issuing function. Service functions are carried out through approximately 36 regional and district offices throughout Canada and abroad.

The Minister of Supply and Services reports to Parliament for the Canadian Commercial Corporation, Canadian Arsenals Limited, Crown Assets Disposal Corporation and the Royal Canadian Mint.

Department of Veterans Affairs. This Department, established in 1944 (RSC 1970, c.V-1), is concerned exclusively with the welfare of veterans and with the dependents of veterans and of those who died during active service or as a result of disability attributable to war service. The Department is empowered to provide treatment services (hospital, medical, dental and prosthetic), welfare services, education assistance, life insurance, and land settlement and home construction assistance. The Veterans' Bureau, which on March 31, 1971 (SC 1970-71, c.31) became the Bureau of Pensions Advocates, assists veterans in the preparation and presentation of pension claims. The same statute authorized the establishment of the Pension Review Board, an independent body that provides a new and improved adjudicating process of appeal for the veteran who is dissatisfied with a previous ruling of the Entitlement Board of the Canadian Pension Commission or a decision of two members of the Commission.

The Department has treatment institutions and facilities in eight major urban centres and three veterans homes across Canada and it maintains administrative offices in the large cities and in London, England. The offices in Canada are shared with the Canadian Pension Commission, the War Veterans Allowance Board and the Bureau of Pensions Advocates.

The Canadian Pension Commission, the War Veterans Allowance Board, the Bureau of Pensions Advocates, the Pension Review Board and the Army Benevolent Fund Board report to Parliament through the Minister of Veterans Affairs.

Director of Soldier Settlement and Director of the Veterans' Land Act. The Director of Soldier Settlement (SC 1919, c.71) is also the Director of the Veterans' Land Act (RSC 1970, c.V-4), and in each capacity is legally a corporation sole. For administrative purposes, however, the programs carried on under both Acts constitute integral parts of the services provided by the Department of Veterans Affairs.

Dominion Council of Health. Established under the Department of National Health and Welfare Act (RSC 1970, c.N-9), the Dominion Council of Health is an advisory body to the Minister of National Health and Welfare on matters relating to the health of Canadians.

Dominion Fire Commissioner. The Commissioner is responsible for directing fire protection and fire prevention programs throughout all the civil departments of the federal government. His Office compiles civilian fire cause and loss statistics on a national basis; he presents the data in his annual report to the Minister of Public Works. The Office of the Dominion Fire Commissioner is part of the Department of Public Works.

Economic Council of Canada. This corporation, established under legislation passed on August 2, 1963 (RSC 1970, c.E-1), consists of a full-time chairman, two full-time directors appointed for a term not to exceed seven years, and not more than 25 additional members to serve part-time and without remuneration. The Council is to be as representative as possible of labour, agriculture and primary industries, secondary industry and commerce, and the general public. Its functions are to advise and recommend measures that will achieve in Canada the highest possible levels of employment and efficient production so that the country may enjoy a high and consistent rate of economic growth and that all Canadians may share in rising living standards; to promote and expedite continuing improvement in productive efficiency in the various aspects of Canadian economic activity; and to publish an annual review of medium- and long-term economic prospects and problems. The Council reports to Parliament through the Prime Minister.

Eldorado Aviation Limited. This company was incorporated April 23, 1953 to carry air traffic, both passenger and freight, for Eldorado Nuclear Limited and its wholly-owned subsidiary, Northern Transportation Company Limited. It reports to Parliament through the Minister of Energy, Mines and Resources.

Eldorado Nuclear Limited. Set up in 1944 (RSC 1952, c.53) under the name of Eldorado Mining and Refining (1944) Limited (the date was omitted in June 1952 and the name changed in 1968), the Crown company's business is the mining and refining of uranium and the production of nuclear fuels in Canada. The company also acts as a custodian for Her Majesty of concentrates purchased under stockpiling contracts. It reports to Parliament through the Minister of Energy, Mines and Resources.

Energy Supplies Allocation Board. The Board was set up following approval by Parliament, January 11, 1974, of the Energy Supplies Emergency Act (SC 1973-74, c.52). The Board reports to the Minister of Energy, Mines and Resources and consists of a chairman and four members appointed by the Governor in Council supported by a staff appointed under the Public Service Employment Act. The Act setting up the Board expires on June 30, 1976. The Board's headquarters is in Ottawa.

The function of the Board is to maintain an overview of the supply of petroleum and petroleum products throughout the Canadian economy. Should an emergency arise, the Board recommends mandatory allocation and/or rationing orders for consideration by the Governor in Council. With approval it also administers these programs. Mandatory programs provided for under the legislation will give the Board wide authority to deal with specific situations.

Export Development Corporation. This Corporation operates under authority of the Export Development Act (RSC 1970, c.8 2nd Supp. and SC 1973, c.13). Its purpose is to facilitate the development of Canada's export trade by the provision of insurance, guarantee, loan and other financial facilities which enable Canadian firms to meet international credit competition. It reports to Parliament through the Minister of Industry, Trade and Commerce. Its affairs are administered by a 12-man board of directors. The chairman and six other directors are appointed from among persons employed in the Public Service of Canada, the remaining five from private business. The Corporation's functions are: to insure Canadian exporters against non-payment by foreign buyers due to credit or political risks over which neither buyer nor seller has any control; to issue guarantees to persons in respect of the financing of exports; to make loans to foreign buyers or to issue guarantees in respect of the purchase of capital goods or major services from Canada involving extended credit terms; and to insure Canadian investments abroad against non-commercial risks such as war or revolution, expropriation or confiscation, or the inability to repatriate capital or earnings.

Farm Credit Corporation. This Corporation which was established on October 5, 1959 (RSC 1970, c.F-2) is a Crown corporation responsible to Parliament through the Minister of Agriculture. Under the Farm Credit Act it makes long-term mortgage loans to assist farmers in developing viable farm businesses. It also administers the Farm Syndicate Credit Act and acts as an agent of the Canada Department of Agriculture in administering the Land Transfer Plan of the Small Farm Development Program.

Fisheries Prices Support Board. The Board was set up under the Fisheries Prices Support Act of 1944 (RSC 1970, c.F-23) to recommend to the government price support measures when severe price declines occur. The Board functions under the direction of the Minister of State (Fisheries) and consists of a chairman, who is a senior officer of the Department, and five members chosen from private and co-operative firms in the industry. The Board has authority to buy fish products and to sell or otherwise dispose of them or to pay producers the difference between a price prescribed by the Board and the average price the product actually commands.

Fisheries Research Board of Canada. The Board is a research body operating under an Act of Parliament (RSC 1970, c.F-24) to advise the Minister of State (Fisheries) on national fisheries and marine research and

development policies, plans and programs. The majority of the Board's 18 members are senior scientists from universities and provincial agencies; the other members are senior executives from Canada's fisheries and marine industries.

The Food Prices Review Board was appointed by the Government of Canada on May 28, 1973, to publish quarterly economic analyses of food price movements; and to inquire into the causes of particular food price increases in any class of food products, and to issue reports thereon with all dispatch including recommendations where the Board considers it appropriate to make them. On August 21, 1973, the Board was also asked to inquire into any increases in the price of any food item where such increase may be unwarranted and, where the Board deems necessary, to publish a report thereon without delay.

The Board consists of five members including a chairman, all appointed by the Governor in Council. It has two branch offices to answer consumer complaints, one in Vancouver and the other in Halifax.

Foreign Claims Commission. By Order in Council PC 1970-2077 of December 8, 1970 the Canadian government established the Foreign Claims Commission to inquire into property claims made by Canadian citizens and the Government of Canada against foreign countries which may, from time to time, be referred to the Commission by the government. The reference is made after the government has negotiated a financial agreement with the foreign country. The Commissioners submit reports and recommendations regarding each claim to the Secretary of State for External Affairs and the Minister of Finance, stating whether, in the opinion of the Commissioners, each claimant is eligible to receive a payment under regulations promulgated from time to time by Order in Council. Up to December 31, 1973 claims against Hungary, Romania, Poland and Czechoslovakia had been referred to the Commission.

Freshwater Fish Marketing Corporation. This Corporation was established under the Freshwater Fish Marketing Act of 1969 (RSC 1970, c.F-13) and given the function of marketing and trading in fish, fish products and fish by-products in and out of Canada with the objectives of ensuring more orderly marketing for the benefit of the whole fishery and achieving higher and more stable prices for the catch. The Corporation receives a grant for initial operating and establishment expenses but conducts its operations on a self-sustaining basis without parliamentary appropriations; it is financed by bank loans with government guarantee of repayment, or by direct loans. The Corporation consists of a board of directors composed of a chairman, a president, one director for each participating province and four other directors appointed by the Governor in Council for a term not exceeding five years. The Corporation reports to Parliament through the Minister of State (Fisheries).

General Adjustment Assistance Board. This Board administers the General Adjustment Assistance Program (GAAP), established in 1968 (SC 1967-68, c.34) and revised in 1971, as well as the Program for the Adjustment of the Footwear and Tanning Industries (PAFTI) established by Order in Council PC 1974-478. The programs help manufacturers take advantage of export opportunities or improve their ability to compete with imports. Financial assistance is available in the form of insured loans under the GAAP program or grants and direct loans under the PAFTI program. The Board is composed of members from both private industry and government; it reports to the Minister of Industry, Trade and Commerce.

Grains Group. In 1970 the Minister responsible for the Canadian Wheat Board (the Minister of Justice at present) organized the Special Advisory Group on Grains (Grains Group) to co-ordinate, review and recommend federal policies for grain production, transportation and handling, and marketing. The Minister responsible for the Canadian Wheat Board serves as the Chairman of the Grains Group. A Group Co-ordinator and three advisers for the areas of production, transportation and handling, and marketing are drawn from the federal Departments of Agriculture; Industry, Trade and Commerce; the Canadian Transport Commission and the railways. The offices of the Grains Group are in Ottawa.

Halifax Relief Commission. The Halifax Relief Commission was established (SC 1918, c.24) to carry on the work of the Halifax Relief Committee, formed by citizens following the explosion in Halifax on December 6, 1917. The Commission, in addition to conducting inquiries into the losses and damage which resulted from the explosion, is charged with the administration of relief funds. The Prime Minister is responsible for the Commission, but its financial arrangements are made through the Minister of Finance.

Heritage Canada. Established under Part II of the Canada Corporations Act (RSC 1970, c.C-32), Heritage Canada is a national trust independent of government. It is concerned with the conservation of buildings, sites and natural and scenic areas of importance to the country's heritage. Its work is financed by memberships, contributions and the interest on an endowment fund to which the federal government granted \$12 million. Heritage Canada seeks to enlist the support of the general public, foundations and corporations; membership is open to anyone.

Historic Sites and Monuments Board of Canada. This Board was established in 1919 and now operates under authority of RSC 1970, c.H-6. The Historic Sites and Monuments Act provides for 15 members — two representatives each from Ontario and Quebec and one from each of the eight other provinces — appointed by the Governor in Council, together with the Dominion Archivist, one representative from the National Museums of Canada and one from the Department of Indian and Northern Affairs, as ex officio

members. The members are generally historians of distinction. It is their function to advise the Minister of Indian and Northern Affairs on matters of national historic and architectural importance with particular reference to commemoration or preservation.

Immigration Appeal Board. The Immigration Appeal Board was established in 1967 by the Immigration Appeal Board Act (RSC 1970, c.I-3). The Board is a court of record with broad discretionary powers to permit the temporary or permanent admission of individuals, notwithstanding contrary provisions of the Immigration Act. The establishing Act provides for the operation of the Board and in particular for the legal and administrative processes involved in appeals by individuals against deportation, detention and the refusal of admission of sponsored relatives ordered under the provisions of the Immigration Act or Regulations. An appeal lies to the Federal Court of Canada and to the Supreme Court of Canada on leave.

The Board consists of nine permanent members and a number of temporary members. The Board sits at Ottawa, Montreal, Toronto, Vancouver and elsewhere as it sees fit.

Indian Claims Commission. This Commission, established by Order in Council PC 1969-2405, is responsible for studying Indian grievances and claims in consultation with Indian representatives and reporting on means for settlement. The one Commissioner reports to the Governor in Council through the Prime Minister.

Industrial Development Bank. The Bank, a subsidiary of the Bank of Canada, was incorporated in 1944 (RSC 1970, c.I-9) to supplement the activities of other lenders with particular consideration to the financing problems of small enterprises.

Information Canada. Information Canada began operations on April 1, 1970. The Department absorbed the Publishing Division of the Canadian Government Printing Bureau, the Canadian Government Exhibition Commission and, in 1971, the Still Photo section of the National Film Board.

The Department is composed of four branches. The Communications Services Branch provides assistance on request to other government departments and agencies, co-ordinates information programs involving more than one department and initiates original federal information projects. The Federal Identity Program group prepares guidelines for application of the federal symbol to federal property. They also advise departments, agencies and Treasury Board on graphic design.

The Expositions Branch creates and presents displays and exhibits in Canada and abroad for government departments and agencies.

The Publishing Branch promotes and sells government publications through Information Canada bookstores, the department's central mail order service and a network of private distribution outlets; provides publishing advice to departments on request and distributes the publications of a number of international organizations (e.g. United Nations).

The Regional Operations Branch provides information to a large proportion of Canadians through 11 citizens' inquiry centres. Mobile information officers work in rural areas not well served by the traditional methods of communication. The Branch is also responsible for running the agency's six retail bookstores.

At present Information Canada reports to Parliament through the Minister of Labour.

International Boundary Commission. The Commission functions by virtue of the treaty of 1925 (RSC 1970, c.I-19) between Canada and the United States. The International Boundary Commissioners, one for Canada and one for the United States, are empowered to inspect the boundary, to repair, relocate and rebuild monuments, to keep the boundary vistas open, to maintain at all times an effective boundary line and to determine the location of any point on the boundary necessary to settle any question that may arise between the two governments. The staff of the Canadian section of the Commission is provided by the Department of Energy, Mines and Resources but the Canadian Commissioner reports to the Secretary of State for External Affairs. The Commissioners meet at least once annually, alternately in Ottawa and Washington.

International Development Research Centre. Established as a public corporation by Act of Parliament (RSC 1970, c.21, 1st Supp.), the International Development Research Centre is an international organization supported financially by Canada. Its objectives are to initiate, encourage, support and conduct research into the problems of developing countries and into methods of applying and adapting scientific and technical knowledge to their socio-economic advancement. One of the Centre's chief purposes is to assist these countries to develop their own research skills and facilities.

The International Development Research Centre's board of governors consists of a chairman, a president and not more than 19 other members, nine of whom must be Canadian citizens. The Centre reports to Parliament through the Secretary of State for External Affairs.

International Fisheries Commissions. The Minister of State (Fisheries) reports to Parliament for the Canadian sections of the several international fisheries commissions of which Canada is a member.

International Joint Commission. This Commission was established under a Britain-United States treaty signed January 11, 1909 and ratified by Canada in 1911 (RSC 1970, c.I-20). The Commission, composed of six members (three appointed by the President of the United States and three by the Government

of Canada), is governed by five specific Articles of the Boundary Waters Treaty of 1909. The Commission's approval is required for any use, obstruction or diversion of boundary waters affecting the natural level or flow of boundary waters in the other country; and for any works in waters flowing from boundary waters or below the boundary in rivers flowing across the boundary which raise the natural level of waters on the other side of the boundary.

Problems arising along the common frontier are also referred to the Commission by either country for examination and report, such report to contain appropriate conclusions and recommendations. In addition questions or matters of difference between the two countries may be referred to the Commission for decision, provided both countries consent.

The Commission has been given responsibilities under the Canada—United States Great Lakes Water Quality Agreement of April 15, 1972 to assist in the implementation of the Agreement by co-ordinating the various programs referred to therein and monitoring their effectiveness.

The Commission reports to the Secretary of State for External Affairs of Canada and to the Secretary of State of the United States.

Interprovincial Boundary Commission. The Manitoba-Saskatchewan Interprovincial Boundary Commission, consisting of a commissioner from each province and the Surveyor General of Canada, is the only commission concerned with boundaries between provinces. However, there are also boundary commissions responsible for the borders between the following provinces and territories: Manitoba and the Northwest Territories; Saskatchewan and the Northwest Territories; Alberta and the Northwest Territories; and British Columbia, the Yukon Territory and the Northwest Territories. All report to Parliament through the Minister of Energy, Mines and Resources.

Law Reform Commission of Canada. The Law Reform Commission of Canada was established (RSC 1970, c.23, 1st Supp.) as a permanent body to study and keep the statutes and other laws of Canada under continuing and systematic review and in this way to complement the legislative and judicial processes. The work of the Commission is carried out with a view to making recommendations for their improvement, modernization and reform, including, without limiting the generality of the foregoing: the removal of anachronisms and anomalies in the law; the reflection in and by the law of the distinctive concepts and institutions of the common law and civil law legal systems in Canada, and the reconciliation of differences and discrepancies in the expression and application of the law arising out of differences in those concepts and institutions; the elimination of obsolete laws; and the development of new approaches to and new concepts of the law in keeping with and responsive to the changing needs of modern Canadian society and of individual members of that society. The Law Reform Commission reports to Parliament through the Minister of Justice.

Library of Parliament. The Library of Parliament as such was established in 1871 (SC 1871, c.21) although it existed earlier. It currently functions under RSC 1970, c.L-7. The Library of Parliament keeps all books, maps and other articles that are in the joint possession of the Senate and the House of Commons. The Parliamentary Librarian is also responsible for the Parliamentary Reading Room. Persons entitled to borrow books from the Library of Parliament are the Governor General, members of the Privy Council, members of the Senate and the House of Commons, officers of the two Houses, judges of the Supreme Court of Canada and the Federal Court of Canada, and members of the Press Gallery. In addition, books are lent to other libraries and government agencies and reference service is given to scholars. A special research branch serves parliamentarians only. The Parliamentary Librarian has the rank of a Deputy Head of a department and is responsible for the control and management of the Library under the Speaker of the Senate and the Speaker of the House of Commons assisted by a joint committee appointed by the two Houses.

Machinery and Equipment Advisory Board. The Machinery and Equipment Advisory Board, established in 1968, is responsible for considering applications for remission of duty on machinery and equipment classifiable under Tariff Items 42700-1 and/or 41100-1 and for advising the Minister of Industry, Trade and Commerce as to the eligibility of such machinery for remissions according to the provisions of these two tariff items. The Board is composed of a chairman and the Deputy Ministers of Industry, Trade and Commerce, Finance and National Revenue. It is assisted by the branches of the Department of Industry, Trade and Commerce concerned with individual industries, including machinery manufacturing. The objective of the Machinery Program, which is administered by the Board, is to increase efficiency throughout Canadian industry by enabling machinery users to acquire advanced equipment at the lowest possible cost while at the same time affording Canadian machinery producers tariff protection on what they manufacture.

Medical Research Council. Established in 1969 and operating under authority of RSC 1970, c.M-9, the Council is a departmental Crown corporation of the federal government. It is composed of a president, a vice-president, and 20 members. The primary aim of the Council is the support and development of research in the health sciences in Canadian universities and affiliated institutions. It reports to Parliament through the Minister of National Health and Welfare.

Merchant Seamen Compensation Board. The Board is established by authority of the Merchant Seamen Compensation Act (RSC 1970, c.M-11) and reports to the Minister of Labour. The three members are appointed by the Governor in Council. The Board meets, as required, to adjudicate claims for compensation made by injured seamen employed on ships registered in Canada when they are not entitled to workmen's compensation under any provincial Workmen's Compensation Act or the Government Employees Compensation Act.

Metric Commission. The Commission was established by Order in Council PC 1971-1146, June 1971. It consists of a full-time chairman and up to 20 part-time commissioners, all of whom are appointed by the Governor in Council for a term of three years. An executive director acts for the Commission in directing the full-time staff.

The Commission advises the Minister of Industry, Trade and Commerce on plans for conversion to the metric system and the need for legislation. It includes 60 sector committees covering all areas of the Canadian economy. The staff plays a co-ordinating role for these sector committees, with the major impetus for conversion coming from the members who represent industry and commerce, associations, provincial governments and other concerned bodies. Each sector committee develops a conversion plan for the industries involved; the sector plan is then approved by a steering committee. Both individual sector plans and over-all national guidelines now follow closely a four-phase framework — investigation, planning, scheduling and implementation — to ensure, as far as possible, that programs are phased and co-ordinated to maximize the benefits of conversion while minimizing the costs.

In the field of public education, activities include the distribution of pamphlets and brochures, the development of an extensive colour transparency library, the establishment of a Speaker's Bureau to provide speech material to interested organizations and the production and distribution of a 30-minute documentary film *The decision*. A mailing address for the general public (Box 4000, Ottawa, Ontario) has been established to handle an increasing number of requests for information on metric conversion in Canada.

Ministry of State for Science and Technology. This Ministry was established by Order in Council PC 1971-1695 on August 11, 1971, with the primary purpose of formulating and developing policies in relation to the activities of the Government of Canada that affect the development and application of science and technology. It is organized into three operational branches: Program Review and Assessment, Policy, and Co-operation. The Minister of State for Science and Technology is also designated as the Minister for the Science Council Act, the Cabinet member to whom the Science Council of Canada reports.

Ministry of State for Urban Affairs. The Ministry was created June 30, 1971 in accordance with the Government Organization Act 1970 (SC 1971, c.42). Its mandate is to develop, research, foster and co-ordinate urban policies and programs. The Ministry's task is to develop the most appropriate means by which the federal government may influence the evolution of the urbanization process in Canada, to integrate urban policy with other policies and programs of the federal government, to foster co-operative relationships in the area of urban affairs with the provinces and, through them, with their municipalities and with public and private organizations. Under the direction of the Secretary and two Assistant Secretaries, the Ministry is divided into two operating wings: Policy and Research and Co-ordination. There are also two service branches: Communications and Administration.

Ministry of Transport. The role and structure of the former Department of Transport were changed and a Ministry was created February 17, 1970. The new Ministry is a corporate structure of Crown corporations and operating administrations with varying degrees of autonomy, together with separate agencies for development and economic regulation. A Ministry headquarters staff supports the Minister and Deputy Minister in the functions of planning, policy formulation and assessment of program achievements in terms of the objectives of the Ministry.

The Canadian Marine Transportation Administration co-ordinates the functions of the St. Lawrence Seaway Authority, the National Harbours Board and the Marine Services components of the former Department of Transport. Its operations include management of the St. Lawrence Seaway through the St. Lawrence Seaway Authority and direct supervision of 13 harbours and other facilities through the National Harbours Board; 300 public harbours and 11 others are administered by commissions under the supervision of the Ministry. It is also responsible for aids to navigation, search and rescue, nautical and pilotage services, marine agencies, steamship inspection and the Canadian Coast Guard.

The Canadian Air Transportation Administration controls and operates Canada's airways and federal airports and provides technical safety supervision of all aeronautical activities in Canadian airspace. These activities are conducted through the branches of Civil Aeronautics, Telecommunications and Electronics, Airports and Field Operations, Air Traffic Control, and Construction Engineering and Architectural, and the support branches of Corporate Planning, Finance and Personnel. The Canadian Air Transportation Administration also provides telecommunications and flight services to other components of the Ministry.

The Canadian Surface Transportation Administration has planning, programming and co-ordinating responsibilities relating to federal participation in the development and, where appropriate, operation of railway and highway systems, ferry services and bridges. The Administration has an interest in the emerging technology of surface transportation and its potential applications in new operating systems.

The recently organized Arctic Transportation Agency is responsible for developing and administering policy related to Ministry-supported transportation facilities and services in the Canadian north to further the government's national objectives there. Intermodal relationships between air, surface and marine transportation systems are a particular concern, as well as the compatibility of these systems with economic and technological growth in the North and with the needs of the residents. In this connection there is a special relationship between the Agency and the Department of Indian Affairs and Northern Development.

The Transportation Development Agency is responsible for initiating, promoting and co-ordinating transportation research and development activities, working closely with government agencies, industry and the academic community to provide a national focus for changing technology and development opportunities in the field of transportation.

The Ministry also includes Air Canada, Canadian National Railways, and Northern Transportation Company Limited. These three Crown corporations are autonomous, maintaining close consultation with the Minister to be consistent with the government's general policies in the field of transportation. The Minister of Transport also reports to Parliament for the Canadian Transport Commission, the National Harbours Board and the St. Lawrence Seaway Authority.

National Advisory Council on Fitness and Amateur Sport. The Council was set up under the Fitness and Amateur Sport Act (RSC 1970, c.F-25) to consider problems connected with the objectives of the Fitness and Amateur Sport Program. The Program was inaugurated in 1961 to increase the number of participants at all levels of competitive and non-competitive physical recreation and amateur sport activity ranging from day camps to the Canada and Olympic Games. The Council, consisting of not more than 30 members appointed by the Governor in Council with at least one from each province, advises the Minister of National Health and Welfare.

National Arts Centre Corporation. The Act establishing this Corporation (RSC 1970, c.N-2) was assented to July 15, 1966. The Corporation consists of a board of trustees composed of a chairman, a vice-chairman, the mayors of Ottawa and Hull, the Director of the Canada Council, the President of the Canadian Broadcasting Corporation, the Government Film Commissioner and nine other members appointed by the Governor in Council for terms not exceeding three years, except for the first appointees whose terms range from two to four years. The objects of the Corporation are to operate and maintain the National Arts Centre, to develop the performing arts in the National Capital Region and to assist the Canada Council in the development of the performing arts elsewhere in Canada. The Corporation reports to Parliament through the Secretary of State.

National Battlefields Commission. This Commission was established by Act of Parliament in 1908 (SC 1908, cc.57-58, as amended) to preserve the Historic Battlefields at Quebec City. Composed of nine members, seven appointed by the federal government and one each by Ontario and Quebec, the Commission is supported by the federal government through annual appropriations and is responsible to Parliament through the Minister of Indian Affairs and Northern Development.

National Capital Commission. This Commission, successor to the Federal District Commission, is a Crown agency created by the National Capital Act (RSC 1970, c.N-3), proclaimed February 6, 1959. Headed by a chairman, it is made up of 20 members, representing the 10 provinces of Canada and the National Capital Region. Its work force fluctuates between 600 and 850, depending on the season.

The Commission is responsible for the acquisition, development and maintenance of public land in the National Capital Region; it co-operates with municipalities by providing planning aid or financial assistance in municipal projects of benefit to the region; and it advises the Department of Public Works on the siting and appearance of all federal government buildings in the 1,800-sq mile National Capital Region. The Commission reports to Parliament through the Minister of State for Urban Affairs.

National Council of Welfare. The National Council of Welfare is an advisory body consisting of 21 private citizens and encompassing a variety of welfare-related interests. Its members include past and present welfare recipients and low-income citizens active in welfare rights, public housing tenants' and other low-income citizens' groups, native people active in Indian and Métis organizations and trade unionists, social workers and others involved in social service associations, private welfare agencies and social work education.

The Council advises the Minister of National Health and Welfare on matters related to welfare. The Office of the National Council of Welfare carries out research and other support activities for the Council and performs a liaison role between the federal department and organizations of the poor and related groups across Canada.

National Design Council. The National Design Council was established by Act of Parliament in 1961 (RSC 1970, c.N-5) to promote and expedite improvement of design in the products of Canadian industry. The Council makes recommendations on design policies and the planning of programs for the furtherance of design in Canada to be implemented through departments and agencies of the federal government, regional governments and other private and institutional bodies. Programs formally recognized by the

Council are identified under the title of "Design Canada". The Council has 17 members appointed by the Governor in Council and reports through its chairman to the Minister of Industry, Trade and Commerce.

National Energy Board. This Board was established under the National Energy Board Act, 1959 (RSC 1970, c.N-6) for the purpose of assuring the best use of energy resources in Canada. The Board, composed of nine members, is responsible for regulating the construction and operation of the oil and gas pipelines that are under the jurisdiction of the Parliament of Canada, the tolls charged for transmission by oil and gas pipelines, the export and import of gas and the import of motor gasoline and motor gasoline-blending components, the export of electric power, and the construction of the lines over which power is exported or imported, the export of crude oil, motor gasoline, middle distillates (diesel fuel, kerosene and heating oil), propane, butanes and heavy fuel oil.

The Board is also required to study and keep under review all matters relating to energy under the jurisdiction of the Parliament of Canada and to recommend such measures as it considers necessary and advisable on the subject. The Board reports to Parliament through the Minister of Energy, Mines and Resources.

National Farm Products Marketing Council. This Council was established in 1972 under the National Farm Products Marketing Agencies Act (SC 1972, c.65). The Council consults with producers, commodity boards, and provincial and federal governments and co-ordinates their views on the establishment and operation of national marketing agencies. It assists and supervises the operations of agencies and promotes more effective marketing of farm products in interprovincial and export trade. The goal is to maintain and promote an efficient, competitive and expanding agricultural industry.

The Council consists of a chairman, a vice-chairman, two full-time and two part-time members, appointed by the Governor in Council and is directly responsible to the Minister of Agriculture. Council headquarters is in Ottawa.

National Film Board. The National Film Board, established in 1939, operates under the National Film Act (RSC 1970, c.N-7) which provides for a board of governors of nine members — a Government Film Commissioner, appointed by the Governor in Council, who is chairman of the Board, three members from the Public Service of Canada and five members from outside the Public Service. The Board reports to Parliament through the Secretary of State. It is responsible for advising the Governor in Council on film activities and is authorized to produce and distribute films in the national interest and, in particular, films "designed to interpret Canada to Canadians and to other nations". The Board is responsible for the production and processing of films for government departments. Its head office is in Ottawa and its operations are carried out in Montreal.

National Harbours Board. The Board was established by Act of Parliament in 1936 (RSC 1970, c.N-8). It is responsible for the administration of port facilities at the harbours of St. John's, Nfld.; Halifax, NS; Saint John and Belledune, NB; Sept Îles, Chicoutimi, Baie des Ha! Ha!, Quebec, Trois-Rivières and Montreal, Que.; Churchill, Man.; Vancouver and Prince Rupert, BC; the Jacques Cartier and Champlain bridges at Montreal, Que.; and the grain elevators at Prescott and Port Colborne, Ont. The Board reports to Parliament through the Minister of Transport.

National Library. The National Library came formally into existence on January 1, 1953, with the proclamation of the National Library Act (RSC 1970, c.N-11). It publishes *Canadiana*, a monthly catalogue of new publications relating to Canada, with an annual cumulation. The Library also publishes other bibliographies. Its Reference Branch maintains the Canadian Union Catalogue which embodies the author catalogues of the major libraries in the 10 provinces and is thus a key to the book collections of the whole country. The Library's own bookstock totals more than 500,000 volumes. The National Librarian reports to Parliament through the Secretary of State.

National Museums of Canada. The National Museums of Canada is a departmental Crown corporation established April 1, 1968, by the National Museums Act (RSC 1970, c.N-12). The corporation was established to join under one administration the four existing museum activities: the National Gallery of Canada; the National Museum of Man (including the Canadian War Museum); the National Museum of Natural Sciences; and the National Museum of Science and Technology (including the National Aeronautical Collection). The corporation reports to Parliament through the Secretary of State.

The board of trustees is composed of a chairman, a vice-chairman, an executive committee of five, and seven additional board members. All these members of the board are appointed by Governor in Council for fixed terms of office. In addition there are two ex officio members, the Director of the Canada Council and the President of the National Research Council.

The purposes of the corporation, according to the Act, are "to demonstrate the products of nature and the works of man, with special but not exclusive reference to Canada, so as to promote interest therein through Canada and to disseminate knowledge thereof". The corporation is empowered to collect, classify, preserve and display objects; undertake or sponsor research; arrange for and sponsor travelling exhibitions of materials in, or related to, its collection and to arrange for the publication or acquisition and the sale to the public of books, pamphlets, replicas and other relevant materials; under-

take or sponsor programs for the training of persons in the professions and skills involved in the operation of museums; arrange for or provide professional and technical services to other organizations whose purposes are similar to any of those of the corporation on such terms and conditions as may be approved by the Minister; and generally to do and authorize such things as are incidental or conducive to the attainment of the purposes of the corporation and the exercise of its powers.

National Parole Board. The National Parole Board was established in January 1959 by the Parole Act (RSC 1970, c.P-2), which gives it absolute authority for parole of inmates under sentence of imprisonment imposed under an Act of Parliament or for criminal contempt of court. Under the Act the Board has jurisdiction over all matters of federal parole except sentences for murder. In such cases eligibility is possible after a stipulated time between 10 and 20 years has been served; consent for eligibility and for release on parole must come from the Governor in Council. The Board is composed of a chairman and eight other members appointed by Order in Council for 10 years. There are also 10 ad hoc members appointed for terms of up to five years. The Board reports to Parliament through the Solicitor General of Canada.

National Research Council of Canada. This is an agency of the federal government established in 1916 to promote scientific and industrial research. The Council operates science and engineering laboratories in Ottawa, Halifax and Saskatoon; gives direct financial support to research carried out in Canadian university and industrial laboratories; sponsors associate committees co-ordinating research on specific problems of national interest; and develops and maintains the nation's primary physical standards. The federal government has designated NRC as the co-ordinating body for the further development of a national scientific and technical information system under the general direction of the National Librarian. Other activities include the provision of free technical information to manufacturing concerns; the publication of research journals; and representation of Canada in International Scientific Unions. Patentable inventions developed in the Council's laboratories are made available for manufacture through a subsidiary company, Canadian Patents and Development Limited. The National Research Council consists of a president, three vice-presidents and 17 members representing Canadian universities, industry and labour. The Council is incorporated under the National Research Council Act (RSC 1970, c.N-14) and reports to Parliament through a designated Minister, at present the President of the Treasury Board.

New Brunswick Multiplex Corporation. This Corporation was established under the terms of a formal agreement between the federal and provincial governments on February 2, 1971. The object of the Corporation is to develop preliminary plans for the creation of a metal-working industrial complex centred in Saint John, NB. The Corporation reports to Parliament through the Minister of Regional Economic Expansion.

Northern Canada Power Commission. The Commission was established by Act of Parliament in 1948 (RSC 1970, c.N-21) to provide power to points in the Northwest Territories where a need developed and where power could be supplied on a self-sustaining basis; the Act was amended in 1950 to give the Commission authority to provide similar services in the Yukon Territory. The name of the Commission (formerly the Northwest Territories Power Commission) was changed in 1956. It is composed of a chairman and two members appointed by the Governor in Council and reports to Parliament through the Minister of Indian Affairs and Northern Development.

Northern Transportation Company Limited. This Company was incorporated in 1947 under the title of Northern Transportation Company (1947) Limited, the date being omitted from the name in 1952. Previously a company chartered under an Alberta statute, it has been a wholly-owned subsidiary of Eldorado Nuclear Limited since that Crown company was established. It carries out the business of a common carrier in the Mackenzie River watershed and the western Arctic and operates a wholly-owned subsidiary trucking company with operations in Alberta and the Northwest Territories. The Company is responsible to Parliament through the Minister of Transport.

Office of the Auditor General. This Office originated in 1878 and currently functions under the Financial Administration Act (RSC 1970, c.F-10). The Auditor General is responsible for examining accounts relating to the Consolidated Revenue Fund and to public property, and for reporting annually to the House of Commons the results of his examinations. He also audits the accounts of various Crown corporations and other organizations. The Minister of Finance acts as spokesman in Parliament for the Auditor General.

Office of the Chief Electoral Officer. This Office was established in 1920 under the provisions of the Dominion Elections Act, now the Canada Elections Act (RSC 1970, c.14, 1st Supp.), and is responsible for the conduct of all federal elections as well as the elections of members of the Northwest Territories Council and of the Yukon Territory Council. In addition, it conducts any vote taken under the Canada Temperance Act. The Chief Electoral Officer is responsible directly to the House of Commons, the President of the Privy Council acting as spokesman for him in the Cabinet.

Office of the Representation Commissioner. The Office was established in 1963 under the provisions of the Representation Commissioner Act (RSC 1970, c.R-6). After each decennial census, the Representation Commissioner is responsible for preparing maps showing the distribution of population in each province

and setting out alternative proposals respecting the boundaries of electoral districts in each province. These maps are supplied to the 10 electoral boundaries commissions (one for each province) established under the provisions of the Electoral Boundaries Readjustment Act (RSC 1970, c.E-2). The Representation Commissioner is a member of each of the 10 commissions. The Secretary of State acts as spokesman for the Office in the Cabinet and the House of Commons.

Panarctic Oils Ltd. This corporation is a consortium of oil and gas companies, individuals and the federal government formed in 1967 to explore for oil and gas in the Arctic area. Panarctic Oils Ltd. is not a Crown corporation and does not report to Parliament.

Pension Appeals Board. This Board, established under the Canada Pension Plan Act (RSC 1970, c.C-5) hears appeals under the Canada Pension Plan and under certain provincial pension plans. The Board consists of a judge of the Federal Court of Canada or of a superior court of a province appointed as chairman and not less than two and not more than five other persons, each of whom must be a judge of the Federal Court or of a superior, district or county court of a province. For purposes of appeals under the Canada Pension Plan, the Board reports to Parliament through the Minister of National Health and Welfare.

Pension Review Board. The Pension Review Board was created under the Minister of Veterans Affairs by the amendments to the Pension Act 1971 (SC 1970-71, c.31). Composed of a chairman and four other members, the Board is an independent and autonomous body that hears appeals from pension applicants dissatisfied with decisions of an Entitlement Board or two members of the Canadian Pension Commission. The Board is also the responsible body when matters of interpretation of the Acts are at issue.

Pilotage Authorities. The Pilotage Act (SC 1971, c.52) established the Atlantic Pilotage Authority, the Laurentian Pilotage Authority, the Great Lakes Pilotage Authority and the Pacific Pilotage Authority as proprietary corporations as specified in Schedule D of the Financial Administration Act. The objects of each Authority are to establish, operate, maintain and administer in the interests of safety an efficient pilotage service within the region set out in respect of the Authority. Each of the four Authorities has a chairman and not more than six other members appointed by the Governor in Council for a term not exceeding 10 years. The Pilotage Authorities report to Parliament through the Minister of Transport.

Post Office Department. Administration and operation of the Canada Post Office, by virtue of the Post Office Act (RSC 1970, c.P-14) and under the Postmaster General, includes all phases of postal activity, personnel, mail handling, transportation of mails by land, water, rail and air and the direction and control of financial services including the operation of the money order service.

The Department's headquarters is located in Ottawa, with regional headquarters in Halifax, Montreal, Toronto and Vancouver. District offices are located in St. John's, Halifax, Saint John, Quebec City, Montreal, Ottawa, North Bay, Toronto, London, Winnipeg, Saskatoon, Edmonton and Vancouver.

Prairie Farm Rehabilitation Administration (PFRA). The PFRA was established in 1935 (RSC 1952, c.214) to assist in the rehabilitation of agricultural lands seriously affected by drought and soil drifting in Manitoba, Saskatchewan and Alberta. Since then it has turned 2.5 million acres of marginal and submarginal land into community pastures and has been instrumental in the construction of many large irrigation and water-control projects. At the farm level, the PFRA has assisted 100,000 dugout projects for irrigation, stock-watering and domestic water supplies. It has also distributed up to 10 million seedlings a year for farm shelterbelts. As an entity within the Department of Regional Economic Expansion, the PFRA has the additional responsibility of implementing certain departmental programs in Alberta, Saskatchewan and Manitoba.

Privy Council Office. For administrative purposes, the Privy Council Office is regarded as a department of government under the Prime Minister. The Clerk of the Privy Council, under whose direction its functions are carried out, is considered as a Deputy Head and takes precedence among the chief officers of the Public Service. The authority of the Privy Council Office is to be found in Sections 11 and 130 of the British North America Act, 1867, which constituted a Council to aid and advise in the Government of Canada to be styled the Queen's Privy Council for Canada. In 1940, with the wartime development of Cabinet committees and the consequent need for orderly secretarial procedures such as agenda, explanatory memoranda and minutes, the Principal Secretary in the Prime Minister's Office was designated Clerk of the Privy Council and Secretary to the Cabinet. Since 1946, the Privy Council Office has been further reorganized, developed and enlarged and certain administrative functions of the Privy Council Office and the Prime Minister's Office have been closely integrated in the interests of efficiency and economy.

The organization of the Privy Council Office at present consists primarily of the Cabinet Secretariat with the following divisions reporting to the Clerk of the Privy Council and Secretary to the Cabinet: Deputy Secretary to the Cabinet (Operations); Deputy Secretary to the Cabinet (Plans); and Deputy Secretary to the Cabinet (Federal-Provincial Relations). Within the Privy Council Office, submissions to the Governor in Council are received, draft orders and regulations prepared, approved Orders are circulated and, in addition, the duties of editing, registering and publishing the federal statutory regulations in Part II of the *Canada Gazette* are carried out. The various secretaries deal with secretarial work for the Cabinet and

for Cabinet committees and interdepartmental committees. This involves the preparation and circulation of agenda and necessary documents to Ministers and recording and circulating decisions; liaison with departments and agencies of the government; and the preparation of material for the Prime Minister.

The Office of the Prime Minister is organized as a Secretariat associated with the Privy Council Office and includes members of the Prime Minister's personal staff responsible for arranging the release of the Prime Minister's statements on matters of public interest, his public appearances and appointments to interview him. They also handle general secretarial business, draft letters and assist the Prime Minister in his Parliamentary duties.

Public Archives. The Public Archives was founded in 1872 and is administered under the Public Archives Act (RSC 1970, c.P-27) by the Dominion Archivist who has the rank of a Deputy Minister and reports to Parliament through the Secretary of State. Its purpose is to assemble and make available to the public a comprehensive collection of source material relating to the history of Canada. It also has broad responsibilities in regard to the promotion of efficiency and economy in the management of the federal government records. The Historical Branch, located in the National Library and Archives Building, is a centre for research on the development of Canada. In addition to the selected records of the federal government, it possesses an extensive collection of private papers of individuals and societies, a map collection which is the most important of its kind in the country, and an extensive collection of paintings, drawings, prints, photographs, sound recordings and films relating to Canada. A specialized library is also at the disposal of searchers. The Records Management Branch operates a large Records Centre in Ottawa and regional centres in Toronto, Montreal, Vancouver, Winnipeg and Halifax where non-current departmental records are centralized, stored and serviced. It assists departments in their records management programs. The Administration and Technical Services Branch operates the Central Microfilm Unit for the several departments of government.

Under the terms of the Laurier House Act (RSC 1952, c.163), the Public Archives is responsible for the administration of Laurier House as a museum.

Public Service Commission. Arrangements were made for civil service appointments under the first Civil Service Act of 1868 but the first Civil Service Commission was not created until 1908. This established the beginnings of the merit system which is today the cornerstone of personnel administration in the Public Service. The Act of 1918 gave the Commission authority to control recruitment, selection, appointment, classification and organization and to recommend rates of pay. The next Civil Service Act, passed in 1961, strengthened the principles of the merit system, clarified the Commission's role in other areas of personnel administration, and gave the staff associations the right to be consulted on matters about remuneration and conditions of employment.

The Public Service Employment Act (RSC 1970, c.P-32) which came into force on March 13, 1967, redefined the Commission's role as the central staffing agency and extended its authority to the Public Service, covering certain groups of employees exempt from the previous Acts. The Public Service is specified in Schedule A of the Public Service Staff Relations Act. It does not include Crown corporations, such as the Canadian Broadcasting Corporation, the Central Mortgage and Housing Corporation, the Canadian National Railways and Air Canada. The new Act also reaffirms the merit principle, at the same time permitting delegation of the Commission's authority, although not its responsibility to Parliament. Under the Act, the Commission is relieved of responsibility for recommending rates of pay and conditions of service to the government, for classification, and for consultation with staff associations on matters that are now the subject of collective bargaining.

On November 9, 1972, the Commission was assigned the duty, by Order in Council PC 1972-2569, of investigating cases of alleged discrimination on grounds of sex, race, national origin, colour or religion with respect to the application and operation of the Public Service Employment Act, and an Investigation Branch has been established for this purpose.

The Public Service Commission reports directly to Parliament. The Secretary of State has traditionally been the Minister who presents the Commission's report to the House of Commons.

Public Service Staff Relations Board. Established in 1967 by the Public Service Staff Relations Act (RSC 1970, c.P-35, as amended by SC 1972, c.18 and SC 1973-74, c.15), the Board is an independent body responsible for determining bargaining units, certifying bargaining agents, dealing with complaints of unfair practices and generally overseeing the administration of the legislation providing for collective bargaining in the Public Service of Canada. The Board is also responsible for providing information on rates of pay and other conditions of employment in Canada to the parties to bargaining in the Public Service. This latter responsibility is met through its Pay Research Bureau. The Board consists of a full-time chairman, vice-chairman and not more than three deputy chairmen who hold office for a period of 10 years and up to eight part-time members, equally representative of the interests of employees and the interests of the employer, who hold office for seven years. Under the Act the Public Service Staff Relations Board reports to Parliament, through such Minister of the Crown, other than a member of the Treasury Board, as may be designated by the Governor in Council. As at December 31, 1973 the responsible Minister was the President of the Privy Council.

Queen Elizabeth II Canadian Research Fund. The Queen Elizabeth II Canadian Research Fund Act (SC 1959, c.33) established the Fund of \$1 million to be administered by a board of trustees to aid in research on the diseases of children. The Prime Minister reports to Parliament on the operations of the Fund.

Restrictive Trade Practices Commission. The Restrictive Trade Practices Commission is responsible under the Combines Investigation Act (RSC 1970, c.C-23) for appraising evidence submitted to it by the Director of Investigation and Research and the parties under investigation, holding hearings and making reports to the Minister of Consumer and Corporate Affairs.

Roosevelt Campobello International Park Commission. Established by the Roosevelt Campobello International Park Commission Act (SC 1964/65, c.19), the Commission consists of six members, three appointed by the Government of Canada and three by the Government of the United States, to administer the Roosevelt Campobello International Park at Campobello, NB. The Canadian section of the Commission reports to Parliament through the Secretary of State for External Affairs.

Royal Canadian Mint. The Royal Canadian Mint has been in operation since 1908. It was first established as a branch of the Royal Mint under the (Imperial) Coinage Act of 1870, and opened on January 2, 1908. On December 1, 1931, it became the Royal Canadian Mint and operated as a branch of the Department of Finance. In 1969, the Mint became a Crown agency corporation, reporting to Parliament through the Minister of Supply and Services. It operates under authority of RSC 1970, c.R-8.

The latter change was made to provide for a more industrial type of organization and for flexibility in producing coins of Canada and other countries; buying, selling, melting, assaying and refining gold and other precious metals; and producing metals, plaques and other devices. The Mint has a seven-man board of directors appointed by the Governor in Council — the Master of the Mint who is its chief executive officer appointed to serve during pleasure, the chairman who is appointed for a four-year period, subject to re-appointment, and five other directors, two from inside and three from outside the Public Service, who are appointed for terms of three years. The Mint now operates basically as a manufacturing enterprise, with the object of making a small profit. Financial requirements are provided through loans from the Consolidated Revenue Fund.

Royal Canadian Mounted Police. The Royal Canadian Mounted Police, a civil force organized and administered by the federal government, was established in 1873 as the North-West Mounted Police. It now operates under authority of the Royal Canadian Mounted Police Act (RSC 1970, c.R-9) and is responsible for enforcing federal laws throughout Canada. By agreement with the governments of eight provinces (all provinces except Ontario and Quebec) it is also responsible for enforcing the Criminal Code of Canada and provincial laws within those provinces under the direction of the respective Attorneys General. In these provinces the Force provides police services to 160 municipalities, assuming enforcement responsibilities for criminal, provincial and municipal laws. The Yukon Territory and Northwest Territories are policed exclusively by the Royal Canadian Mounted Police. A Commissioner, appointed by the Governor in Council, has control and management of the Force and of all matters connected herewith, under the direction of the Solicitor General of Canada.

St. Lawrence Seaway Authority. The St. Lawrence Seaway Authority was established by Act of Parliament in 1951 (RSC 1970, c.S-1) and came into force by proclamation on July 1, 1954. The Authority was incorporated for the purposes of constructing, maintaining and operating all such works as may be necessary to provide and maintain, either wholly in Canada or in conjunction with works undertaken by an appropriate authority in the United States, a deep waterway between the Port of Montreal and Lake Erie. The Crown corporation, Seaway International Bridge Corporation Limited, is subsidiary to the St. Lawrence Seaway Authority. The Authority is composed of a president, a vice-president and a member, and reports to Parliament through the Minister of Transport.

Science Council of Canada. The Science Council of Canada was established in 1966 (RSC 1970, c.S-5) and became a Crown corporation on April 1, 1969. The Council consists of 25 members, each having a specialized interest in science or technology, and four associate members chosen from among officers or employees of the federal government. Members hold office for terms of not more than three years and associate members hold office during pleasure. All are appointed by the Governor in Council. The duties of the Science Council are to assess in a comprehensive manner Canada's scientific and technological resources, requirements and potentialities and to make recommendations thereon. The Council reports to Parliament through a designated Minister, at present the Minister of State for Science and Technology.

Seaway International Bridge Corporation Limited. The Seaway International Bridge Corporation Limited was established under the Companies Act, by Letters Patent, November 13, 1962. It operates the international toll bridge system between Cornwall, Ont. and Rooseveltown, NY on behalf of the owners, the St. Lawrence Seaway Authority and the Saint Lawrence Seaway Development Corporation. It reports to Parliament through the Minister of Transport.

Standards Council of Canada. The Council was established by Act of Parliament (RSC 1970, c.41, 1st Supp.) which received Royal Assent on October 7, 1970. Its objectives are to foster and promote voluntary

standardization in fields relating to the construction, manufacture, production, quality, performance and safety of buildings, structures, manufactured articles and products and other goods, including components thereof, not expressly provided for by law, as a means of advancing the national economy, benefiting the health, safety and welfare of the public, assisting and protecting consumers, facilitating domestic and international trade and furthering international co-operation in the field of standards. The Council is responsible for co-ordinating the planning and execution of a program for the development of standards in the metric (SI) system. This activity is in support of the over-all program which is being developed by the Preparatory Commission for Metric Conversion.

The Council consists of not more than 57 members, of whom six are federal representatives, 10 represent the provinces and 41, various national organizations. Membership is broadly representative of all levels of government, primary and secondary industries, distributive and service industries, trade associations, labour unions, consumer associations and the academic community. The Council reports to Parliament through the Minister of Industry, Trade and Commerce.

Statistics Canada. Statistics Canada became the new name for the Dominion Bureau of Statistics with the proclamation of a new Statistics Act (SC 1971, c.15) on May 1, 1971. The Bureau was initially set up by statute in 1918 as the central statistical agency for Canada (SC 1918, c.43). In 1948 this statute, which had been consolidated as the Statistics Act (RSC 1927, c.190), was repealed and replaced by the Statistics Act (RSC 1952, c.257) which was amended by SC 1952-53, c.18, assented to March 31, 1953. The 1971 Act replaces that statute.

The functions of Statistics Canada are to compile, analyze and publish statistical information relative to the commercial, industrial, financial, social and general condition of the people and to conduct regularly a census of population and agriculture of Canada as required under the Act.

Statistics Canada is a major publication agency of the federal government; its reports cover all aspects of the national economy and social conditions of the country. The administrative head of the bureau is the Chief Statistician of Canada who has the rank of a Deputy Head of a department and reports to Parliament through the Minister of Industry, Trade and Commerce.

Tariff Board. Constituted in 1931, the Board derives its duties and powers from four statutes: the Tariff Board Act (RSC 1970, c.T-1); the Customs Act (RSC 1970, c.C-40); the Excise Tax Act (RSC 1970, c.E-13); and the Anti-dumping Act (RSC 1970, c.A-15).

Under the Tariff Board Act, the Board makes inquiry into and reports on any matter in relation to goods that, if brought into Canada, are subject to or exempt from customs duties or excise taxes. Reports of the Board are tabled in Parliament by the Minister of Finance. It is also the duty of the Board to inquire into any other matter in relation to the trade and commerce of Canada that the Governor in Council sees fit to refer to the Board.

Under the provisions of the Customs Act, the Excise Tax Act and the Anti-dumping Act, the Tariff Board acts as a court to hear appeals from decisions of the Department of National Revenue, Customs and Excise, in respect of excise taxes, tariff classification, value for duty, drawback of customs duties and determination of normal value or export price in dumping matters. Declarations of the Board on appeals are final and conclusive but the Acts contain provisions for appeal on questions of law to the Federal Court and thence to the Supreme Court of Canada.

Tax Review Board. The Tax Review Board, created in 1949 as the Income Tax Appeal Board and later called the Tax Appeal Board, now operates under the Tax Review Board Act 1970 (SC 1970-71, c.11) which was proclaimed December 15, 1971. The Board is declared by statute to be a court of record and has jurisdiction to hear appeals by taxpayers against their assessments under the Income Tax Act and the Estate Tax Act, as well as appeals under the Old Age Security Act, certain sections of the Canada Pension Plan, the Unemployment Insurance Act, and any other Act of the Parliament of Canada that specifies a right of appeal to the Board. In most instances, an appeal lies from the Board to the Federal Court of Canada with a further right of appeal from that Court to the Supreme Court of Canada. The Board shall consist of not less than three or more than seven members, and at present consists of a chairman, an assistant chairman and three other members. Its offices are located at Ottawa and it hears appeals at 24 centres throughout Canada and holds frequent sittings each year at the main centres such as Montreal, Toronto, Vancouver, and London, Ontario. The Board is under the jurisdiction of the Minister of Justice but is independent of the Department of Justice.

Telesat Canada. Telesat Canada was incorporated in 1969 by an Act of Parliament (RSC 1970, c.T-4). Its objectives are to establish satellite telecommunication systems providing telecommunication services on a commercial basis. The recommendations of a government task force on satellite policy and the use of satellite technology for domestic communications appointed in 1967 and a 1968 White Paper based to a large extent on those recommendations preceded the establishing legislation.

The authorized capital of the corporation consists of 10 million common shares without par value and 5 million preferred shares with a par value of \$10 per share. At the end of 1972, there were 6 million common shares issued and outstanding. The corporation will ultimately be owned by three main groups of shareholders: the federal government, the telecommunications common carriers and the general public.

Currently, the corporation is owned by the first two groups.

Telesat is not a Crown corporation, nor is it an agent of Her Majesty. Its annual report is tabled in the House of Commons by the Minister of Communications.

Textile and Clothing Board. This Board was established by SC 1971, c.39 to receive complaints and conduct inquiries about textile and clothing goods imported into Canada under such conditions as to cause or threaten serious injury to Canadian production. After its investigative procedures are completed, the Board makes written recommendations to the Minister of Industry, Trade and Commerce. The Board consists of three members appointed by the Governor in Council and maintains its head office in the National Capital Region.

Treasury Board. The Treasury Board was first established as a committee of the Queen's Privy Council for Canada by Order in Council PC 3 of July 2, 1867, and was made a statutory committee in 1869. The Minister of Finance was appointed Chairman of the Board, with four other Privy Councillors to be designated as members by the Governor in Council. The Secretary of the Board and the members of his staff were employed by the Department of Finance.

By the Government Organization Act, 1966 (SC 1966, c.25) the Board Secretariat was established as a separate department of government with its own Minister, the President of the Treasury Board. The committee constituting the Treasury Board includes, in addition to the President, the Minister of Finance and four other Privy Councillors.

The Financial Administration Act (RSC 1970, c.F-10), defines the Treasury Board's responsibilities as the central management agency of government. These responsibilities include the organization of the Public Service, financial management, annual and longer-term expenditure planning, and expenditure control, including allocation of resources among departments and agencies of government; management of personnel functions in the Public Service; and improvement in the efficiency of management and administration in the Public Service.

The staff of the Treasury Board is divided into five branches. The Administrative Policy Branch is responsible for the development, interpretation, dissemination and evaluation of policies, guidelines and regulations in administrative areas, including the financial management systems needed to provide for adequate visibility and accountability, and other administrative inputs to government operations such as accommodation, travel, contracting, electronic data processing, etc., with a view to ensuring probity and prudence in the acquisition of administrative inputs as well as their effective and efficient use in support of departmental programs. The Planning Branch is responsible for the development and application of systems and procedures for evaluating the effectiveness and efficiency of programs and projects and for providing advice and planning assistance for organizational change in government. The Personnel Policy Branch is responsible for all matters relating to personnel management in the Public Service including manpower requirements, manpower development and training, classification, compensation benefits and representing the government in collective bargaining with bargaining agents representing employees in the Public Service.

The Official Languages Branch is responsible for the development, monitoring, evaluation and communication of the federal government's official languages policies and programs and for the application of the Official Languages Act within the Public Service. The Program Branch is responsible for analyzing the policy, program and project proposals of departments and recommending to the Treasury Board an optimum allocation of available financial and manpower resources to achieve program objectives, and for expenditure control and estimates preparation.

The Secretariat of the Interdepartmental Committee on the 1976 Olympic Games reports to Parliament through the President of the Treasury Board, who is also the designated Minister responsible for the National Research Council and Canadian Patents and Development Limited.

Unemployment Insurance Commission. The Commission, an incorporated body of three commissioners, was established under the provisions of the Unemployment Insurance Act. One commissioner is appointed chairman and chief executive officer, one commissioner represents insured persons and one represents employers. The Commission administers the Act and Regulations, and performs other duties which the Minister of Manpower and Immigration may require. It functions at three levels: head office in Ottawa, five regional offices and a number of district and other offices across the country. The Commission reports to Parliament through the Minister of Manpower and Immigration.

The function of the Commission, in accordance with the Act and Regulations, is to ensure an income to the unemployed by making weekly payments to them for a specified time during the period of unemployment. Under the 1971 legislation, about two million more people are covered than under former legislation. Eight weeks of insured employment are required to qualify for all benefits; and with additional weeks an interruption of earnings caused by sickness or maternity can be covered.

Uranium Canada, Limited. This Crown company, incorporated in June 1971 under the Canada Corporations Act (RSC 1970, c.C-32) pursuant to the Atomic Energy Control Act (RSC 1970, c.A-19) is an agency corporation under Schedule C of the Financial Administration Act (RSC 1970, c.F-10). For all purposes it is an agent of Her Majesty and its powers may be exercised only as such. The shares of the company, with the

exception of the qualifying shares of the directors, are held by the Minister of Energy, Mines and Resources. Registered under the trade mark UCAN, the company acts as an agent on behalf of the federal government in the acquisition and future sales of the joint stockpile of uranium concentrates established under the agreement entered into with Denison Mines Limited, January 1, 1971. Denison Mines Limited acts as the sales agent for the concentrates in the joint stockpile including negotiating for contracts with customers. UCAN also acts as the agent on behalf of the federal government for future sales from the general government stockpile. The corporation's head office is in Ottawa.

War Veterans Allowance Board. This Board, established under the authority of the War Veterans Allowance Act is a quasi-judicial body consisting of 10 members, including a chairman and a deputy chairman, appointed by the Governor in Council. The Board administers the War Veterans Allowance Act and Part XI of the Civilian War Pensions and Allowances Act. Its functions include ensuring that the 19 district authorities in various regions throughout Canada interpret the legislation in a fair, reasonable and equitable manner. The War Veterans Allowance Board is also an appeal body which may consider appeals against the decision of a district authority. It reports to Parliament through the Minister of Veterans Affairs.

Appendix 2

Synopsis of legislation

Synopsis of legislation of the first session of the twenty-ninth Parliament, January 4, 1973 to February 26, 1974, passed in the twenty-first and twenty-second years of the reign of Her Majesty Queen Elizabeth II.

In summarizing this material it is not always possible to convey the full implication of the legislation. For further details the reader should refer to the *Statutes of Canada*, 1973. The Chapter number is followed by the date of Royal assent.

Chapter 1 (January 31) *An Act to amend the Pilotage Act* extends until February 1, 1974 the by-laws and regulations made by a pilotage authority as defined in the Canada Shipping Act.

Chapter 2 (February 8) *An Act to amend the Unemployment Insurance Act, 1971 (No. 1)* removes the ceiling on advances under Section 137 and stipulates that the amount authorized in the Supplementary Estimates tabled in the House of Commons on January 8, 1973 shall be considered an advance, repayable with interest, not an appropriation.

Chapter 3 (February 23) *Appropriation Act No. 1, 1973* grants certain sums of money for the public service for the financial year ending March 31, 1973.

Chapter 4 (March 29) *Appropriation Act No. 2, 1973* grants certain sums of money for the public service for the financial year ending March 31, 1973.

Chapter 5 (March 29) *Appropriation Act No. 3, 1973* grants certain sums of money for the public service for the financial year ending March 31, 1974.

Chapter 6 (March 29) *An Act respecting the Electoral Boundaries Readjustment Act* changes the name of the electoral district of "Lachine" in Quebec to "Lachine-Lakeshore".

Chapter 7 (March 29) *An Act respecting the Electoral Boundaries Readjustment Act* changes the name of the electoral district of "Waterloo" in Ontario to "Waterloo-Cambridge".

Chapter 8 (April 5) *An Act to amend the Old Age Security Act* increases the basic amount of the monthly old age pension from \$80 to \$100 effective April 1, 1973, with future escalation to commence April 1, 1974; clarifies the meaning of the base year in the escalation formula; and simplifies the calculation of income.

Chapter 9 (April 5) *An Act to amend the War Veterans Allowance Act* increases, effective April 1, 1973, the amount of the allowance to a surviving spouse on the death of a veteran or to a veteran on the death of a spouse or child from \$201 a month to \$257.21, and increases the maximum allowable income, including allowance, from \$3,252 a year to \$3,926.52; removes the limitations in respect of the payment of an allowance to a person who owns personal property; abrogates certain powers of the Board relating to transferred property in determining entitlement to or the amount of an allowance; and provides for the future escalation of allowances under the Act to commence January 1, 1974.

Chapter 10 (April 18) *An Act to amend the Customs Tariff* adds Bangladesh to the list of countries enumerated in Subsection 3(2) of the Act and sets out the rates of customs duties on certain goods.

Chapter 11 (April 18) *An Act to amend the Emergency Gold Mining Assistance Act* extends the Act from June 30, 1973 to June 30, 1976 without any change in the present method of computing the assistance to be paid.

Chapter 12 (April 18) *An Act to amend the Excise Tax Act* extends the list of exemptions from sales tax to numerous items.

Chapter 13 (April 18) *An Act to amend the Export Development Act* increases the authorized share capital of the Export Development Corporation from \$75 million to \$125 million and increases the ceiling for outstanding loans and guarantees by the Corporation from \$850 million to \$1,500 million.

Chapter 14 (April 18) *An Act to amend the statute law relating to income tax* amends the Income Tax Act, the Income Tax Application Rules, 1971 and Part IV of an Act to amend the Income Tax Act (SC 1970-71-72, c.63), making a number of changes regarding corporation taxes, treatment of certain types of transactions or transfers of property in the matter of capital gains and providing for additional exemptions when calculating personal income tax.

Chapter 15 (April 18) *An Act to amend the Public Service Staff Relations Act* provides for the appointment of one or more deputy chairmen of the Public Service Staff Relations Board.

Chapter 16 (June 28) *Appropriation Act No. 4, 1973* grants certain sums of money for the public service for the financial year ending March 31, 1974.

Chapter 17 (June 28) *An Act to amend the Judges Act* provides salaries for additional judges of the Federal Court of Appeal and the Trial Division of the Federal Court and for additional judges of various provincial courts.

Chapter 18 (June 28) *An Act to amend the National Housing Act* enables the Central Mortgage and Housing Corporation to participate in new community projects, neighbourhood improvement programs, rehabilitation of family housing units; facilitates home ownership loans and contributions to co-operatives; encourages low-income projects; permits the Corporation to assist the provinces in acquiring, developing and servicing land not solely for housing; provides loans for municipal sewage treatment facilities; and makes loans available to Indians for purchasing or improving housing on Indian reserves.

Chapter 19 (June 28) *An Act to amend the Pension Act* increases to \$1,050 from \$804 the amount of the annual discretionary pension payable to the parent, or a person in place of the parent, of a member of the Armed Forces and to an additional \$501 from \$384 when there was more than one dependent; and increases the scale of pensions for disabilities up to a maximum of \$4,704 and of pensions for death up to a maximum of \$3,528.

Chapter 20 (July 27) *An Act to amend the Aeronautics Act* provides for security measures to be taken at airports, including the search of persons and property for the protection of passengers, crews and aircraft, and for the appointment of security officers.

Chapter 21 (July 27) *The Canada Wildlife Act* provides for agreements with provincial governments, municipal authorities, organizations or persons, respecting wildlife research, conservation and interpretation programs and measures, and for the purchase, acquisition or lease of lands; and includes cost-sharing arrangements in connection with the provisions of the Act and for certain administrative matters.

Chapter 22 (July 27) *An Act to amend the Customs Tariff (No. 2)* deletes certain tariff items set out in Schedule A of the Act and the enumeration of goods and rates of duty applicable to those items and adds certain other items as listed in Schedule B of this amendment.

Chapter 23 (July 27) *The Electoral Boundaries Readjustment Suspension Act* provides for the suspension of electoral boundaries commissions established following the decennial census of Canada in 1971 until Parliament makes other provision therefor or until December 31, 1974, whichever first occurs.

Chapter 24 (July 27) *An Act to amend the Excise Tax Act (No. 2) and the Excise Tax Act* provides for exemptions from excise tax on certain items including federal taxes now levied on cosmetics and other preparations.

Chapter 25 (July 27) *An Act to amend the Fisheries Development Act* adds construction and equipment of commercial ice-making and ice-storing facilities and commercial fish-chilling facilities to the list of projects contributing to improvements in productivity in commercial fishing operations which are eligible for federal payments.

Chapter 26 (July 27) *An Act to amend the Harbour Commissions Act (Nanaimo Harbour Commission)* raises the minimum number of members of the Nanaimo Harbour Commission to five and provides for the appointment of one member by the Nanaimo Harbour Commission, one member by the Nanaimo City Council and one member by the Nanaimo Regional District Board.

Chapter 27 (July 27) *An Act to amend the Immigration Appeal Board Act* provides for the appointment of up to seven temporary members to the Board and the temporary power to appoint such number of temporary members as the Governor in Council considers necessary to eliminate the Board's backlog of appeals and anticipated appeals; for the hearing and determination of appeals by a single member of the Board; and for persons who entered Canada by November 30, 1972 and who are not landed immigrants to obtain that status on compliance with certain provisions relating to admission of immigrants to Canada.

Chapter 28 (July 27) *An Act respecting certain immigration laws and procedures* permits persons who have been in Canada since November 6, 1972, but who have not reported to the immigration authorities as immigrants prior to the coming into force of this Act, to be deemed to have so reported.

Chapter 29 (July 27) *An Act to amend the Income Tax Act (No. 2)* permits certain deductions from corporate tax on manufacturing and processing profits.

Chapter 30 (July 27) *An Act to amend the statute law relating to income tax (No. 3)* includes increased exemptions and allowable deductions in computing personal income tax.

Chapter 31 (July 27) *The Olympic Act* authorizes the issue and sale of Olympic commemorative coins and stamps and postal related products, and the establishment by the Olympic Corporation of a lottery scheme to provide financial assistance for the Olympic Corporation.

Chapter 32 (September 1) *The Maintenance of Railway Operations Act, 1973* provides for resumption and continuance of operation of railways and for settlement of disputes with respect to terms and conditions of employment between railway companies and their employees.

Chapter 33 (September 14) *An Act to amend the Crop Insurance Act* enables any province that advances part of the crop insurance premium to be reimbursed up to 50% of the premiums paid on behalf of insured persons if no federal contribution is required toward administrative expenses of the provincial crop insurance scheme.

Chapter 34 (September 14) *An Act to amend the Family Allowances Act and the Youth Allowances Act* increases to \$12 the amount of the monthly family and youth allowances.

Chapter 35 (September 14) *An Act to amend the Old Age Security Act* provides for a quarterly adjustment of the pension and of the guaranteed income supplement based on quarterly increases in the consumer price index and prohibits any downward adjustment of the pension or supplement. The period of adjustment to be amended in the event the consumer price index is calculated on a different base period.

Chapter 36 (September 14) *The Statute Law (Supplementary Retirement Benefits) Amendment Act, 1973* removes the ceiling of 2% on escalation of the pension index and relates the supplementary retirement benefits payable under the Act to the consumer price index, reduces under certain circumstances the ages at which pension increases will become payable under the Act, provides for the assumption by the government of the full cost of the escalation of pensions for persons retired before 1970 and, under certain conditions, for assumption of part of the cost of the escalation of pensions for persons retired since 1969. It also amends the Members of Parliament Retiring Allowances Act, the Diplomatic Service (Special) Superannuation Act, the Public Service Superannuation Act, the Canadian Forces Superannuation Act and the Royal Canadian Mounted Police Superannuation Act to provide for adjustments in contributions under these Acts.

Chapter 37 (December 5) *An Act to amend the Cooperative Credit Associations Act* authorizes the Canada Deposit Insurance Corporation to make loans to associations to enable them to meet requirements for liquid funds needed to discharge their maturing debt obligations; authorizes the Corporation to make loans to corporations operating under provincial law to enable them to meet short-term requirements for liquid funds arising from their operations; and to provide for advances out of the Consolidated Revenue Fund in an amount not exceeding \$200 million to the Corporation for the purpose of making the loans and to reimburse the Corporation for any losses sustained in respect of such loans.

Chapter 38 (October 24) *Criminal Law Amendment (Capital Punishment) Act* provides for reinstatement of the law relating to capital punishment that existed prior to December 30, 1972 for a period terminating on December 31, 1977 and eliminates the use of the terms "capital murder" in relation to murder that is punishable by death and "non-capital murder" in relation to murder that is punishable by life imprisonment.

Chapter 39 (December 5) *An Act to amend the Customs Act* makes dutiable "short-landed goods" that appear on a ship's inward report as having been loaded on board at a foreign port but that do not appear on the dock or in the warehouse in Canada, subject to certain qualifying statements or circumstances.

Chapter 40 (December 5) *An Act respecting the Electoral Boundaries Readjustment Act* changes the name of the electoral district of "Peel South" in Ontario to "Mississauga".

Chapter 41 (December 12) *An Act to amend the Canada Pension Plan* removes the limitation of 2% in the annual increase in the pension index within the meaning of the Act, fixes the year's maximum pensionable earnings at \$6,600 for 1974 and \$7,400 for 1975 and provides thereafter that increases in the consumer price index be fully reflected in the escalation of benefits payable under the Act after that date.

Chapter 42 (December 12) *An Act respecting the Electoral Boundaries Readjustment Act* changes the name of the electoral district of "LaSalle" in Quebec to "LaSalle-Émard-Côte Saint-Paul".

Chapter 43 (December 12) *An Act respecting the Electoral Boundaries Readjustment Act* changes the name of the electoral district of "Ottawa East" in Ontario to "Ottawa-Vanier".

Chapter 44 (December 12) *Family Allowances Act, 1973* repeals existing legislation concerning Family Allowances (RSC 1970, c.F-1) and Youth Allowances (RSC 1970, c.Y-1) and provides for a monthly allowance of \$20 for each eligible child up to the age of 18; makes special provision to accommodate provincial programs offering similar allowances or supplements by permitting payment of allowances at rates set out by the province, subject to certain safeguards protecting the right of individual families to receive not less than the amount they would otherwise receive under the federal program, as well as against over-payment in total within a province. The Act also provides for upward adjustment of the allowances each October based on the year-to-year rise in the cost of living, but prohibits any downward adjustment.

Chapter 45 (December 12) *An Act to amend the Federal-Provincial Fiscal Arrangements Act, 1972, the Federal-Provincial Fiscal Revision Act, 1964 and the Income Tax Act* broadens the equalization formula to include school purpose taxes in the revenue to be equalized, extends to March 31, 1977 the post-secondary education financing arrangements as contained in Part VI of the Federal-Provincial Fiscal Arrangements Act, 1972 and enables an amount equivalent to the three points of personal income tax to be recovered when the Youth Allowances Act was repealed by the Family Allowances Act (Chapter 44).

Chapter 46 (December 12) *Foreign Investments Review Act* provides for the review and assessment of acquisitions of control of Canadian business enterprises by certain persons and of the establishment of new businesses in Canada by certain persons, and provides for a Foreign Investment Review Agency and for a Commissioner thereof.

Chapter 47 (December 21) *Appropriation Act No. 5, 1973* grants to Her Majesty certain sums of money for the public service for the financial year ending March 31, 1974.

Chapter 48 (December 21) *An Act to amend the Parole Act* provides for the appointment of not more than 10 additional ad hoc members of the National Parole Board and for their remuneration and expenses.

Chapter 49 (December 21) *The Residential Mortgage Financing Act* establishes the Federal Mortgage Exchange Corporation, with a capital stock of \$100 million, to buy or sell mortgages on residential properties or to make loans of up to one year on the security of such mortgages; offers special status for specialized mortgage investment companies and special "flow through" tax conditions for such companies.

Chapter 50 (January 14) *The Protection of Privacy Act* amends the Criminal Code, the Crown Liability Act and the Official Secrets Act to create offences relating to the invasion of privacy and provides that the Crown shall in certain circumstances be liable for punitive damages in case of loss or damage caused by or attributable to the interception of a private communication or by the use or disclosure of such private communication or by the disclosure of its existence.

Chapter 51 (January 14) *The Election Expenses Act* amends the Canada Elections Act, the Broadcasting Act and the Income Tax Act in respect of election expenses by providing for reimbursement of a portion of election expenses to candidates and registered parties; sets out new regulations on the appointment of auditors and agents and the amount and allocation of free broadcast time for major parties. Sources of contributions must be disclosed by the parties and certified as such by the Chief Electoral Officer for tax credit purposes.

Chapter 52 (January 14) *The Energy Supplies Emergency Act* provides a means to conserve the supplies of petroleum products within Canada during periods of national emergency caused by shortages or market disturbances affecting the national security, welfare and economic stability of Canada. It amends the National Energy Board Act and establishes an Energy Supplies Allocation Board.

Chapter 53 (January 14) *The Oil Export Tax Act* imposes a charge on the export of crude oil from Canada, imposes an oil export tax under the Excise Tax Act and allocates certain of the revenues derived from the oil export tax by providing that there shall be paid out of the Consolidated Revenue Fund to defined producing provinces for a prescribed period a proportion of 50% of the revenues to such provinces.

Appendix 3

Canadian chronology, 1973

Events in the general chronology from 1497 to 1866 are given in the *1951 Canada Year Book* pp 46-49; from 1867 to 1953 in the *1954 Canada Year Book* pp 1259-1264; and annually from that year in successive editions. The following listing covers the year 1973; it should be noted that certain dates are approximate. Acknowledgment is given to the publication *Canadian News Facts*, Toronto, which has served as a reference in the preparation of this chronology.

January

Jan. 1, Prince Edward Island began celebrating its centennial year. *Jan. 4*, Governor General Roland Michener opened the first session of the 29th Parliament. George Alexander Drew, 78, Premier of Ontario from 1943 to 1948 and Progressive Conservative leader of the opposition in the House of Commons from 1949 to 1956, died in Guelph. *Jan. 5*, The House of Commons approved a government resolution deploring US air raids on Haiphong and Hanoi, North Vietnam, and urging the US government to abstain from ordering further raids. *Jan. 14*, *Unité-Québec* reverted to its original party name of *Union nationale* at a national council meeting in Montreal. *Jan. 17*, US President Nixon announced a substantial increase in the amount of Canadian oil permitted to enter the US. *Jan. 18*, Karen Magnussen of North Vancouver retained the women's national figure skating championship in Vancouver; Toller Cranston of Toronto retained the men's championship. *Jan. 18-19*, A conference of federal and provincial finance ministers held in Ottawa; the system of shared-cost programs was the main topic of discussion. *Jan. 20*, A nine-week strike by 240 airline ground personnel ended when a two-year contract between the workers and Nordair Ltd. was signed; an initial 35 cents per hour and an 18% increase over two years were granted. *Jan. 22*, Istvan Meszaros, Marxist scholar and Hungarian Culture Minister before 1956, was granted landed immigrant status in Canada after twice being turned down as a security risk. *Jan. 22-23*, Federal-provincial housing conference held in Ottawa; participants agreed to hold annual conferences, set up continuing federal-provincial talks and plan spending for three-year periods. *Jan. 24*, British Columbia longshoremen accepted a contract giving them an increase of \$1.05 per hour plus improved fringe benefits, ending a six-month dispute. External Affairs Minister Mitchell Sharp announced that Canada would be a member of the International Commission for Control and Supervision in Vietnam for a trial period of 60 days; other members to be Hungary, Poland and Indonesia. *Jan. 25*, Approximately 100,000 gallons of fuel oil was spilled into the Pacific near Alert Bay, BC when the freighter *Irish Stardust* ran aground north of Vancouver Island; the spill spread southward for 200 miles. *Jan. 26*, Plans were announced for the sale of commemorative coins to help finance the 1976 Olympic Games in Montreal; coins went on sale December 12. *Jan. 29*, The first 130 of a total of 230 members of the ICCS team arrived in

Saigon, led by Ambassador Michel Gauvin. *Jan. 30*, Federal Public Works Minister Jean-Eudes Dubé announced that expropriation for the proposed airport at Pickering, near Toronto, would proceed despite objections from residents and environment groups. *Jan. 31*, The Supreme Court of Canada ruled that the Nishga Indians have no aboriginal claim over land in the Nass River Valley in BC, the first such court decision in Canada.

February

Feb. 1, Gerald K. Bouey appointed governor of the Bank of Canada for a seven-year term, succeeding Louis Rasminsky. *Feb. 4*, Yvon Dupuis, former member of the federal cabinet under Lester Pearson, won the leadership of the Quebec *Ralliement créditiste* party at a convention in Quebec City. *Feb. 5*, Construction began on the world's tallest self-supporting structure, the 1,805-ft CN communications and observation tower in Toronto. *Feb. 7*, Canada formally recognized the government of North Vietnam. *Feb. 13*, The report of the Quebec Royal Commission on the French language, the Gendron report, published by *Le Devoir* in Montreal; major recommendations include that French be made the official language of Quebec while French and English be retained as national languages, that the government take steps to make French the language of internal communication in corporations and that English-language Protestant and Catholic schools be retained; the full report was tabled in the Assembly February 27. *Feb. 14*, Prime Minister Trudeau agreed to establish a committee to negotiate Indian land claims in the Yukon. *Feb. 15*, It was announced that the United World College to be built near Victoria would be named the Pearson College of the Pacific. The federal government imposed restrictions on oil exports to the US after oil shortages there resulted in the US government increasing oil import quotas. *Feb. 16*, An anti-hijacking agreement was signed in Ottawa by External Affairs Minister Mitchell Sharp and the Cuban Vice-Foreign Minister Rene Anillo, one day after a similar agreement between the US and Cuba was signed; the treaty requires each country to present hijackers for prosecution in their own courts or return them to the country in which the crime was committed. *Feb. 19-23*, Data-route, the world's first nation-wide digital data system in commercial operation, inaugurated by Trans-Canada Telephone System; the system enables more data to be carried on existing circuits at lower rates in original format. *Feb. 22*, Plans for construction of a 300,000

b/d oil refinery at Come By Chance, Nfld., to be built by Shaheen Natural Resources Inc. of New York, announced by Premier Frank Moores. Jacques Rose acquitted by Quebec Court of Queen's Bench of a charge of murder in the death of former Quebec Labour Minister Pierre Laporte. Final report of the Ontario Royal Commission on book publishing released; proposals include a sales tax on magazines and periodicals to pay for a \$1 million program of assistance to Ontario's publishing industry. Death of Jean-Jacques Bertrand, 57, former *Union nationale* Premier of Quebec, in Montreal. Feb. 25, René Lévesque re-elected by acclamation as president of the separatist *Parti Québécois* in Laval, Quebec. Feb. 26, Anne Murray chosen female vocalist of the year in the annual RPM awards; Gordon Lightfoot chosen male vocalist and composer of the year. Feb. 27, Josephine Barrington Tatlow, dramatic actress and a leading CBC performer since 1948, died in Toronto. Feb. 28, Mr. Justice Emmett M. Hall retired from the Supreme Court; Mr. Justice Robert G.B. Dickson of Manitoba Court of Appeal appointed March 16 to succeed him.

March

Mar. 1, Karen Magnussen of North Vancouver won the women's singles title at the world figure skating championships at Bratislava, Czechoslovakia. Pierre Vallières acquitted by a Quebec Court of Appeal of a charge of manslaughter in the death of a woman in a bomb blast in Montreal in 1966. Mar. 4, Inquest into an air crash in NWT found that the pilot's inexperience contributed to the crash, that not all instruments necessary for night flying were in proper working condition and that the three passengers killed met accidental deaths. Mar. 9, Transport Minister Jean Marchand announced that air agreements had been reached with the Federal Republic of Germany and the People's Republic of China, allowing direct flights to two German cities and China. Mar. 11, Death of Tim Buck, leader of the Communist Party of Canada from 1929 to 1962. Mar. 13, An \$80 million suit against Richardson-Merrell, drug manufacturers, filed in Youngstown, Ohio, on behalf of 74 Canadian children born deformed after their mothers had taken thalidomide. Mar. 14-22, Court injunctions and provincial legislation ended a seven-month nation-wide strike by 2,318 members of the Union of Elevator Constructors. Mar. 15, Alberta Indians won a settlement of \$190,000 plus a grant in lieu of interest in back payment of "ammunition money", an annual sum of \$2,000 that was to have been paid to the Indians for purchase of ammunition according to a treaty signed in 1877. Fifty Indians from the Prairie Provinces and Ontario left Winnipeg by car with supplies for US Indians holding the South Dakota town of Wounded Knee. Mar. 22, The St. Lawrence Seaway Authority granted \$1.5 million and 795 acres to the Caughnawaga Indians after 18 years of negotiation in compensation for 1,300 acres of land expropriated for the Seaway in 1955. Appointment of James Johnson Macdonnell to suc-

ceed Maxwell Henderson as Auditor General of Canada, effective July 1. Mar. 26, Death of Don Messer, popular Maritimes musician and leader of the band known as The Islanders. Mar. 27, External Affairs Minister Mitchell Sharp arrived in Saigon, South Vietnam, to inspect the operation of the ICCS. Mar. 29-Apr. 1, Mexican president Luis Echeverría visited Canada. Mar. 30, Manitoba and the federal government announced joint participation in a guaranteed annual income experiment in Manitoba; the plan to be operated by Manitoba with the federal government contributing 75% of the cost.

April

Apr. 1, Canadian missionary Lloyd Oppel of Courtenay, BC, returned to Canada after his release from a North Vietnamese prison camp where he had been held for five months. Apr. 3, A \$100 million program designed to improve language teaching and to reverse the flow of Quebec immigrant children into English-language schools was announced by Quebec Education Minister François Cloutier. Apr. 5, The *Scotian Journalist* of Halifax and the Toronto *Globe and Mail* won the 1972 Roland Michener Awards for Journalism. Apr. 7, Four members of the ICCS team in South Vietnam, including Canadian Captain Charles Laviolette, killed in a helicopter shot down on an observer mission. Apr. 9, Contingency plan reached with the US for oil spills on the east and west coasts; the plan describes navigational routes, navigational aids and methods for cleaning up oil spills. A federal-provincial conference on industry held in Ottawa; regional economic disparities, Canada-US relations and federal foreign investment legislation were discussed. Apr. 10, James Alexander Corry, principal of Queen's University from 1961 to 1968, won \$50,000 Royal Bank Award for outstanding contribution to Canadian education. Apr. 11, Selection of jury candidates for Jacques Rose's trial for conspiracy after the fact in the kidnapping of Pierre Laporte ruled illegal by Court of Queen's Bench in Montreal. Apr. 12, Heritage Canada, the first national trust for the preservation of Canada's historic and natural heritage, launched with an initial fund of \$12 million. Apr. 17, Winners of Governor General's awards for literature announced by the Canada Council; English section: Robertson Davies for his novel *The Manticore*, Dennis Lee for *Civil elegies and other poems*, and John Newlove for a book of poetry, *Lies*; French section: Jean Hamelin and Yves Roby for *Histoire économique du Québec 1851-1896*, non-fiction; Antonine Maillet for *Don l'original*, fiction; and Gilles Henault, *Signaux pour les voyants*, poetry; no English non-fiction award was presented. Apr. 20, Anik II, Canada's second communications satellite, launched from Cape Kennedy, Florida. Apr. 23, Don Bell of Montreal awarded the 1973 Stephen Leacock Memorial Medal for humour for *Saturday night at the bagel factory*. Apr. 25-27, Federal-provincial conference on welfare held in Ottawa; provincial ministers accepted Health Minister Marc Lalonde's social

security proposals, including family allowance increases, a limited form of guaranteed income and higher Canada Pension Plan benefits. *Apr. 27*, Establishment of a Food Prices Review Board was announced by Consumer and Corporate Affairs Minister Herbert Gray; Beryl Plumptre of Toronto appointed head of the Board in May. *Apr. 29*, Severe flooding of the Saint John River, NB, caused damage estimated at \$20 to \$25 million; Premier Richard Hatfield announced a plan for compensating affected families May 4. *Apr. 30*, Ontario Premier William Davis announced formation of a select committee of the Ontario Legislature to study the awarding of a contract to the Canada Square Corp. for construction of the new Ontario Hydro headquarters, after the Toronto *Globe and Mail* reported that the company was given a nine-month head start on competitors in preparing plans.

May

May 1, A \$16 million contract for construction of 2.5-mile experimental elevated transit system at Canadian National Exhibition grounds in Toronto was awarded to Krauss-Maffei, a West German firm, by Ontario government. *May 2-3*, Federal-provincial premiers' conference on labour and labour law held in Ottawa. *May 4*, Death of Leslie Frost, 77, Conservative Premier of Ontario from 1949 to 1961, in Lindsay, Ont. *May 6*, Death of Sir Ernest MacMillan, 79, musician and author, in Toronto. *May 7*, "Cities for the 70s" conference held in Toronto; attending mayors agreed to approach federal and provincial governments to demand more federal and provincial revenues. *May 10*, Montreal Canadiens won the Stanley Cup, defeating the Chicago Black Hawks four games to two in National Hockey League playoffs. *May 13*, Five prisoners escaped from maximum security St. Vincent de Paul penitentiary in Montreal. *May 15*, Commons justice committee empowered to investigate operation of the penitentiary system following a series of escapes from prisons. Canada Council announced that the winners of the \$15,000 Molson Prizes for 1972 for outstanding contributions to the arts, humanities or social sciences were painter Alfred Pellán, economist John Deutsch and writer George Woodcock. *May 16*, Two Canadian women shot and killed by Zambian troops at the Zambia-Rhodesia border; troops claimed they were saboteurs threatening a power plant on Zambesi River. *May 18*, Family homestead of former Prime Minister John Diefenbaker donated to the University of Saskatchewan. *May 23-25*, A conference of federal and provincial premiers held in Ottawa; cost-sharing proposals for health and education were discussed. *May 24*, Indian and Northern Affairs Minister Jean Chrétien announced changes in government policy to allow Indians more control over Indian education. *May 29*, External Affairs Minister Mitchell Sharp announced that Canada would withdraw from the ICCS peacekeeping force in Vietnam by July 31, two months after the end of the initial 60-day trial period.

June

June 1, Marshall McLuhan, director of the Centre for Culture and Technology at St. Michael's College, University of Toronto, appointed to the Papal Commission for Social Communication, established by Pope Pius XII to look into relations between the Vatican and the media. *June 4*, Ontario Premier William Davis announced extensive government plans for land use in Ontario, including a plan to reserve 55,000 acres in a 50-mile-long greenbelt between Markham and Dundas near Toronto. *June 5*, W.A.C. Bennett, Social Credit Premier of BC for 20 years, retired from the provincial legislature 10 months after his party's defeat in provincial elections. William Teron appointed president of Central Mortgage and Housing Corporation, effective July 1. J. Pearce Bunting appointed chairman of the Toronto Stock Exchange board of governors. *June 5-7*, Conference of the Canadian Federation of Mayors and Municipalities held in Charlottetown, PEI; resolutions passed demanding a share of federal and provincial income and corporate tax fields and urging the federal government to introduce legislation to relocate rail lines at the outskirts of cities. *June 6*, Resolution setting 1978 as the target date for a functionally bilingual federal public service passed by House of Commons. A program to enable an estimated 1 million illegal immigrants to become Canadian citizens was launched; mobile citizenship-counselling and registration offices, a store-front office in Toronto and a publicity campaign were planned. Canada notified the US State Department that oil tankers would not be allowed to move through Canadian waters to reach a proposed oil refinery at Eastport, Maine. *June 15*, Federal government imposed temporary export restrictions on gasoline and heating oil after exports of gasoline had increased 50 times over the same period the previous year and exports of heating oil had nearly doubled. *June 16*, Indian Prime Minister Indira Gandhi began an eight-day visit to Canada; the tour was marked by demonstrations by various organizations. *June 19*, Karen Kain and Frank Augustyn of the National Ballet of Canada won first prize for duet ensemble at the International Ballet Competition in Moscow; Karen Kain tied for second place in the women's division. *June 25*, Queen Elizabeth and Prince Philip arrived in Toronto, beginning a 10-day visit to four provinces. *June 26*, The International Association of Machinists voted to accept an agreement reached with Air Canada June 19 ending rotating strikes that had affected 32 cities. *June 28*, A provincial election in Manitoba returned Premier Edward Schreyer's NDP government with 31 seats out of 57, a gain of three; Conservatives won 21, Liberals five. A federal energy report tabled in the House of Commons predicted that Canadian energy needs would quadruple by the year 2000. *June 29*, Federal government imposed controls on the export of oilseeds and their products to avert a shortage of feeds for livestock and poultry; the controls were widened July 9 to include a series of edible oils, animal fats and livestock protein feeds. Tembec

Forest Products Ltd., a company formed by former employees of the Kipawa Mill in Témiscaming that was closed in May 1972, was granted a \$4.5 million federal incentives grant toward re-opening the mill; the mill was purchased September 28 by a Quebec Crown corporation acting as an intermediary for Tembec and the mill began producing sulphite pulp October 1.

July

July 3, Death of Karel Ancerl, 65, music director and conductor of the Toronto Symphony Orchestra. *July 6*, Federal Cabinet approved the National Energy Board recommendations for a \$6.5 million program to increase the capacity of the Interprovincial Pipe Line's crude oil pipeline to Ontario and a \$35.5 million program to increase capacity of natural gas pipeline to BC. *July 8*, Fifth annual convention of the Council of Canadian Unions held in Winnipeg; major topic discussed was the independence of the national labour movement; the name of the Council was changed to Confederation of Canadian Unions. *July 12*, Supreme Court of Ontario declared the federal Indian Act "inoperative" because of discrimination by race. The federal government oceans policy announced; the policy included government stimulation of industry to ensure Canadian control of technical and industrial knowledge to exploit off-shore resources with emphasis on special programs in marine science and technology, including environment. *July 14*, Death of Charles Jennings, 65, Canada's first national radio newscaster, in Ottawa. Strike by 6,500 salmon fishermen, shoreworkers and tendermen in BC ended with acceptance of a contract providing for higher prices for catches and better fringe benefits. *July 15*, Two Canadian members of ICCS in Vietnam, captured June 28 by Viet Cong troops, released unhurt and returned to Saigon. *July 17*, Jacques Rose found guilty of being an accessory after the fact in the kidnapping of former Quebec Labour Minister Pierre Laporte. *July 23*, Plans released by the federal and provincial governments for a \$325 million rail, port and resource development program to encourage development in north-western BC. *July 25*, Death of Louis St. Laurent, 91, Liberal Prime Minister of Canada from 1948 to 1957, in Quebec City. *July 26*, A conference to develop a new national policy for western Canada ended; transportation, tariffs and the possibility of provincial ownership of banks were the major topics discussed.

August

Aug. 2-10, Nineteenth Commonwealth Heads of Government meeting held in Ottawa, attended by Queen Elizabeth and 32 other government leaders; rights of minority groups in southern African territories and the cessation of nuclear weapons testing were among topics discussed. *Aug. 3*, Interim feed grains policy announced by federal government; prices guaranteed for oats, barley and feed wheats. *Aug. 8*, Lawsuit filed on behalf of two Eskimo passengers and an unborn Eskimo child killed in Arctic

air crash against Gateway Aviation Ltd. and pilot Marten Hartwell; action is believed first in Canada for estate of an unborn child. *Aug. 15*, Greenpeace Three, a Canadian yacht carrying members of the Greenpeace Foundation protesting French nuclear tests at Mururoa atoll, boarded by French troops while within a security zone declared around the atoll; Captain David McTaggart injured. *Aug. 23*, Second annual meeting of Inuit Tapirisat of Canada, the national Eskimo brotherhood, ended at Baker Lake, NWT; resolutions passed that polar bear hunting be restricted to Eskimos and that ITC headquarters in Ottawa be empowered to act as spokesman for 17,000 Eskimos in negotiations for land claims with the federal government. *Aug. 27*, The Indian Act was declared biased against women but not invalid by the Supreme Court of Canada. *Aug. 30-31*, The Indian and Northern Affairs building in Ottawa occupied for 24 hours by 200 Indians protesting the Department's youth liaison specialist program and demanding federal intervention to stop the James Bay power development and settlement of land claims; files concerning the James Bay project were stolen from the Minister's office. *Aug. 31*, Shell Canada announced plans for construction of a \$700 million oil extraction plant to produce 100,000 b/d from the Athabaska tar sands.

September

Sept. 7, Northwest Territories Supreme Court allowed the Indian Brotherhood of the Northwest Territories to file a caveat against the title to about one third of the land in the Territories; the Brotherhood was prohibited from filing the caveat with the registrar of land titles until the federal government exhausted its appeals. The first report on the Canada-US Agreement on Great Lakes Water Quality of 1972 filed by the International Joint Commission; the report blamed both Canada and US for delaying application of anti-pollution rules and said the US must spend more to meet the objectives of the treaty. *Sept. 11*, Formation of a provincial Solicitor General's Department for Alberta announced; Helen Hunley appointed first Solicitor General. *Sept. 13*, Energy Minister Donald Macdonald announced imposition of a 40 cents a barrel export tax on crude oil. *Sept. 18*, An agreement between the Alberta government and Syncrude Canada Ltd. announced; Syncrude agreed to develop the Athabaska tar sands by building an extraction plant to produce 125,000 barrels of synthetic crude daily and to pay royalties of 50% to the Alberta government on the oil extracted. *Sept. 21*, Tariffs on imported US cattle and beef reimposed. *Sept. 23*, Canadian auto workers given parity with US workers for first time in contract between United Auto Workers and Chrysler Corp., ratified in Detroit. *Sept. 24*, The federal government announced that Canada would withdraw from the Commonwealth merchant shipping agreement within five years and reserve Canadian coastal shipping for Canadian vessels. Canada formally recognized the new military government of Chile. *Sept. 25*, Robin Phillips appointed artistic director of

Stratford Festival, succeeding Jean Gascon. *Sept. 26*, Provincial health ministers met in Charlottetown, PEI; the over-supply of doctors in urban areas and under-supply in rural areas were major topics discussed. *Sept. 27*, Death of Edgar McInnis, 74, historian, in Toronto. *Sept. 28*, Marcel Pepin, president of the Confederation of National Trade Unions, elected president of the 15-million-member World Confederation of Labor at a convention in Évian-les-Bains, France.

October

Oct. 2, About 500 people evacuated from three communities in central Alberta after a ruptured gas main near Red Deer Lake released hydrogen sulphide gas; residents returned to their homes next day. *Oct. 4*, Alberta government announced increased royalties on gas and oil production; new rates based on wellhead prices replaced a system of royalties based on production. *Oct. 5*, Jules Léger, Ambassador to Belgium and Luxembourg, appointed Governor General of Canada effective mid-January, succeeding Roland Michener. An agreement with the People's Republic of China announced in Ottawa whereby that country would purchase up to 220 million bushels of wheat over a three-year period. *Oct. 10*, US Appeals Court dissolved an order preventing the government owned Canadian Development Corporation from purchasing a controlling block of 10 million shares of Texasgulf Inc. at \$29 a share. A \$200 million oil refinery at Come By Chance, Nfld., officially opened; refinery has a capacity of 100,000 b/d and is the first of two planned for the site. Prime Minister Trudeau began an official three-day visit to the People's Republic of China; the visit concluded with a meeting with Chairman Mao Tse-Tung. *Oct. 12*, Canadian Film Awards presented in Montreal; winners were *Slipstream* by David Acomba for fiction feature, *Coming Home* by Bill Reid for non-fiction feature, Geneviève Bujold in Claude Jutra's *Kamouraska* for best actress and Jacques Godin in the National Film Board's *OK ... Liberté* for best actor. *Oct. 15*, Export controls placed on propane and butane gases and heavy fuel oils by National Energy Board in response to exceptionally heavy sales to the US. The deadline for registration of illegal immigrants passed with approximately 50,000 having applied for landed immigrant status. Tear-gas used to disperse a crowd of 100 Indians protesting the occupation of a house on the Caughnawaga Indian Reserve near Montreal by a non-Indian family. *Oct. 18*, Canadian Radio-Television Commission announced that the CBC would be permitted to establish six new FM radio stations and a French-language FM network. *Oct. 23*, Four Canadian International Paper Co. mills returned to operation after 3,800 United Paperworkers International Union members accepted contract proposals. *Oct. 24*, A partial ban on hanging, except for cases involving prison guards or police murders, passed the House of Commons in a vote free of party discipline. *Oct. 29*, Premier Robert Bourassa's Liberal

government returned to power in Quebec elections; Liberals won 102 of 110 seats for a record majority in Quebec.

November

Nov. 1, The federal government announced an increase in the export tax on crude oil to \$1.90 a barrel. *Nov. 2*, Canada agreed to share a support role with Poland on the peacekeeping force in the Middle East set up by UN to enforce peace settlement. *Nov. 7*, Ontario's first Minister of Housing, Robert Welch, sworn into office in Toronto. *Nov. 13*, Dr. Henry Morgentaler, who admitted performing 6,000 to 7,000 abortions, acquitted of having performed an illegal abortion by a Montreal Court of Queen's Bench. *Nov. 15*, The Quebec Supreme Court issued an injunction requested by Indians and Eskimos of the James Bay region ordering a temporary halt to James Bay hydro-electric development project; the injunction was lifted Nov. 22 by the Quebec Court of Appeals. *Nov. 19*, Agreement signed between Shaheen Natural Resources Ltd. and SNAM Progetti Ltd. of Milan for the construction of a 200,000 b/d oil refinery at the Strait of Canso; NS Premier Gerald Regan said November 20 he would not allow his government to invest more than \$40 million in the project. *Nov. 22*, The Supreme Court of Canada ruled that the rights of children are paramount in cases of child custody, allowing four-year-old Lisa Moores to remain with the people who had raised her from infancy; previous cases usually favoured the natural parents. Prime Minister Trudeau predicted in a House of Commons oil policy speech that no rationing would be necessary if voluntary restraints were followed and said that the Edmonton-Sarnia pipeline would be extended to Montreal. *Nov. 25*, Ottawa Rough Riders defeated Edmonton Eskimos 22-18 in the Grey Cup game, for the championship of the Canadian Football League. *Nov. 26*, The sale of \$800 million worth of uranium oxide to Tokyo Electric Power Co. announced by Denison Mines Limited; delivery to take place at the rate of 4 million lb. a year from 1984 to 1993. *Nov. 29*, Federal-provincial communications conference held in Ottawa; federal Minister of Communications Gérard Pelletier announced he would consolidate the Canadian Radio-Television Commission and the telecommunications committee of the Canadian Transport Commission and that the federal government would move some computer work and communications research into Atlantic and western provinces. Approximately 7,000 teachers in various areas of Ontario submitted their resignations, effective Dec. 31; a two-year contract signed by 7,800 Metropolitan Toronto secondary school teachers and school boards ended a work-to-rule campaign. The federal government announced an aid program for refugees displaced by the recent Chilean coup; the program included relaxed selection criteria for immigration, job training and placement and assistance toward initial settlement costs and transportation.

December

Dec. 3, A tax of \$2.80 per passenger to be levied on air-carriers using airports operated by the Ministry of Transport announced in Ottawa. *Dec. 6*, Federal oil policy announced in House of Commons; major feature was the decision to form a national petroleum company. *Dec. 7*, Energy Minister Donald Macdonald announced sale of a Canadian nuclear power station to South Korea and an option on a second plant at an estimated cost of \$250 million each. *Dec. 10*, Ontario government introduced legislation to force school boards in 17 jurisdictions and 8,000 teachers to binding arbitration and voiding resignations submitted November 29; legislation was withdrawn December 20 after teachers agreed to postpone their resignations to January 31. *Dec. 13*, Controversial wiretap legislation returned to the House of Commons by the Senate after deletion of requirements that wiretap subjects be told afterward that they had been overheard; the Commons restored the requirements and returned the Bill to the Senate January 10, 1974; the Senate then passed it. *Dec. 14*, Final report of the Royal Commission on the Non-Medical use of Drugs tabled in the House of Commons; recommendations include compulsory confinement for one to three months in residential treatment

facilities of medically diagnosed opiate addicts; the Canadian Medical Association rejected the proposal in a letter from CMA president Peter Banks to Health Minister Marc Lalonde December 19. *Dec. 18*, Commons Northern Affairs Committee report tabled in the House of Commons; recommendations included granting more of the self-governing powers of provincial legislations to the Yukon Territory. A conflict-of-interest code for public servants was introduced in the House of Commons by Prime Minister Trudeau; the code suggests that public servants reveal business, financial or commercial interests that could be construed as conflicting with official duties. *Dec. 19*, The Montreal Symphony Orchestra announced that grants from citizens, business, provincial and municipal governments would allow it to continue in operation; president Robert Buck previously announced that financial problems would force its dissolution. *Dec. 20*, Plans to create a Commission of Human Rights and Interests to combat discrimination and protect individuals from unfair practices announced by Justice Minister Otto Lang. Deputy Commissioner Maurice J. Nadon appointed Commissioner of the Royal Canadian Mounted Police, succeeding W.L. Higgitt. *Dec. 28*, Mr. Justice Bora Laskin appointed Chief Justice of the Supreme Court of Canada, succeeding Gérard Fauteux.

Appendix 4

Canadian honours

An exclusively Canadian honours system was introduced in 1967 with the establishment of the Order of Canada. The honours system was enlarged in 1972 with the addition of the Order of Military Merit and three decorations to be awarded in recognition of acts of bravery.

The Order of Canada, instituted on July 1, 1967, the 100th anniversary of Confederation, is designed to honour Canadians for outstanding achievement and service to their country or to humanity at large. Originally, two levels of membership were provided: Companions of the Order and recipients of the Medal of Service. The Order was revised in 1972 and now comprises three categories of membership: Companions, Officers — which includes all those who received the Medal of Service — and Members. The latter category is intended especially to recognize service in a locality or in a particular field of activity. Not more than 15 persons may be appointed in any one year as Companions and the total number of Companions is not to exceed 150. Officers of the Order may be appointed to the number of 40 persons a year and up to 80 persons may be appointed yearly as Members of the Order.

All Members of the Order are entitled to have letters placed after their names, as follows: for the Companion CC, for the Officer OC and for the Member CM.

Her Majesty The Queen is Sovereign of the Order and the Governor General holds office as Chancellor and Principal Companion. Appointments to the Order are made, with the approval of the Sovereign, by the Governor General with the assistance of an Advisory Council which meets twice each year under the chairmanship of the Chief Justice of Canada. Members of the Advisory Council include the Clerk of the Privy Council, the Under-Secretary of State, the Chairman of the Canada Council, the President of the Royal Society of Canada, the President of the Association of Universities and Colleges of Canada and not more than two other members who may be appointed by the Governor General from among the present members of the Order.

While Canadians are the primary recipients of the Order, the constitution provides that persons who are not Canadian citizens and whom Canada desires to honour may be appointed as honorary members at any of the three levels of membership.

The Order of Military Merit has been established to provide a means of recognizing conspicuous merit and exceptional service by members of the Canadian Armed Forces, both Regular and Reserves. The Order has three levels of membership: Commander (CMM), Officer (OMM) and Member (MMM).

The Queen is the Sovereign of the Order and the Governor General is the Chancellor as well as being a Commander of the Order. The Chief of the Defence Staff is the Principal Commander of the Order. Appointments to the Order are made by the Governor General on the recommendation of the Minister of National Defence; nominations are made by the Chief of the Defence Staff who is assisted by an advisory committee for the Order.

The number of appointments made annually will vary, depending on the number of nominations submitted and approved. The Order's constitution stipulates, however, that the total number of appointments made annually will not exceed one tenth of one percent of the average strength of the Forces. Members of foreign armed forces who render particularly meritorious service to Canada or the Canadian Armed Forces in the course of their military duties may be made honorary members of the Order at any of the three levels.

Canadian bravery decorations. A Medal of Courage was included in the Order of Canada in 1967 but it was found that a single medal would not serve to recognize in an equitable manner acts of bravery which entail varying degrees of risk. Consequently, no awards were made and the medal has now been superseded by a series of three decorations: the Cross of Valour (CV), the Star of Courage (SC) and the Medal of Bravery (MD). Instances of extraordinary heroism in circumstances of extreme peril will be marked with the award of the Cross of Valour; other outstandingly courageous actions may qualify for the award of the Star of Courage or the Medal of Bravery. The bravery decorations are awarded with the approval of the Sovereign by the Governor General on the advice of the Canadian Decorations Advisory Committee. They may be awarded to civilians, members of the Canadian Armed Forces and of the protective services, and may be awarded posthumously.

ORDER OF CANADA

Appointment Date June 19, 1973

Companions

Dr. John R. Bradfield, CC, BScEng

The Honourable Thane A. Campbell, CC, QC, MA,
LLD

M. Jules Léger, CC

Dr. Moses Osborne Morgan, CC, CD, BA, MA,
LLD

Dr. John J. Robinette, CC, QC, DCL, LLD

The following Officer was elevated to a Companion:

Dr. Norman McLaren, CC, LLD

Order of Canada (continued)

Officers

M. Laurent Beaudoin, OC, BA, CA
 Madame Jehane Benoit, OC
 Dr. Albert E. Berry, OC, BASc, MASc, CE, PhD,
 DSc, PEng
 M. J-Gérard De Grace, OC, BA, MA, DPh
 Dr. Arthur C. Erickson, OC, BArch, FRAIC, RCA,
 DEng, LLD
 Dr. Robert E. Folinsbee, OC, BSc, MS, PhD, LLD,
 FRSC
 Miss Margaret P. Hyndman, OC, QC
 Mr. W. Arthur Irwin, OC, BA
 Dr. Arthur Dill Kelly, OC, MD, DSc, LLD
 M. Roger Larose, OC, BA, BSc, LScSoc
 Miss Jean Cecilia Leask, OC, BA, MA, RN
 Miss Karen Magnussen, OC
 Mrs. Florence I. Matheson, OC
 Dr. William O. Mitchell, OC, LLD, DLitt
 Dr. J. Mavor Moore, OC, BA, DLitt
 The Very Reverend Dr. Clarence M. Nicholson,
 OC, BA, DD, LLD, DCL
 Le Révérend Père André Renaud, OC, OMI, BA,
 LPh, LTh, MEd, LLD
 Miss Kathleen M. Richardson, OC, BA
 Sergeant-Major Henry W. Stallworthy, OC, FRGS

Members

Madame Hélène Baillargeon-Côté, CM
 Madame Lucette R. Beauchemin, CM
 Dr. Clare Bice, CM, BA, LLD, RCA, OSA
 M. Anselm Boudreau, CM
 M. Lionel Bourgault, CM
 Madame Pauline Boutal, CM
 M. Charles-Auguste Cadieux, CM
 Mrs. Iona V. Campagnolo, CM
 Mrs. Amy L. Clemons, CM
 Dr. George C. Clutesi, CM, DCL, LLD
 Miss Mona H. Coxwell, CM
 Miss True Davidson, CM, BA, MA, DLittS
 M. Rodolphe Duguay, CM
 Madame Corinne Dupuis-Maillet, CM
 Mrs. Aileen A.H. Fish, CM, BA
 Dr. Helen Beny Gibson, CM, BA, LLD
 Mr. Lawrence Henry Hall, CM, CA
 Dr. Joseph Charles Hill, CM, LLD
 Mrs. Winnifred S. Hill, CM
 Mr. Genzo Kitagawa, CM
 Mr. Nicolas Koudriavtzeff, CM
 Monseigneur Ernest Lemieux, CM, PD, BA, LPh,
 DTh
 Mrs. Rhona Lucas, CM, RSW
 Miss Jessie B. Miffen, CM, BA, BLS
 Mrs. Lorraine Monk, CM, BA, MA
 Dr. James G. MacGregor, CM, BA, BSc, PEng,
 LLD
 Mrs. Dorothy Macpherson, CM
 Mr. Albert H. McQuoid, CM
 The Reverend Canon Noah Nasook, CM
 Mr. Wilfred L. Notley, CM
 Dr. Paul Rekai, CM, MD
 Mr. George O. Shaw, CM

Dr. Casimir G. Stanczykowski, CM, LLD
 M. Irenée Vachon, CM, AFCASI
 Mr. Boris Volkoff, CM
 Mrs. Dorothy Walton, CM, BA, MA
 Mrs. Gladys C. Watt, CM, BA
 Dr. James Balfour Wedge, CM, QC, BComm, LLD
 Mr. John Coghlan Whitelaw, CM, QC, BA, LLB
 Mr. William C. Woods, CM

Appointment Date December 17, 1973**Companions**

The Honourable Thomas A. Crerar, PC, CC, LLD
 Le Révérend Père Roger Guindon, CC, OMI, LPh,
 DTh, LLD
 Dr. George Ignatieff, CC, MA, LLD, DCL
 M. Alfred Rouleau, CC, DSc
 Dr. William Twaits, CC, BComm, DCL, DBusAd-
 min

Officers

Mr. W. Vacy Ash, OC, MA
 Dr. Margaret Atwood, OC, AM, LLD
 Mlle Micheline Beauchemin, OC, RCA
 Dr. Jean S. Boggs, OC, AM, PhD, LLD, DUC,
 FRSC
 Me C. Perrault Casgrain, OC, CR, LLL, LLD
 Major John L. Charles, OC, DSO, PEng, LLD
 Dr. Kathleen Coburn, OC, MA, BLitt, LLD, FRSL,
 FRSC
 Dr. Richard E.G. Davis, OC, MA, LLD, DScSoc
 M. l'abbé Gérard Dion, OC, LTh, LPh, MScSoc
 M. Michel Gauvin, OC, DSO
 Dr. Saul Hayes, OC, QC, MA, LLD, FRSA
 Dr. Richard L. Hearn, OC, QC, DEng, LLD
 Mr. Henry Rutherford Jackman, OC, QC, LLB
 Dr. Léon Katz, OC, MSc, PhD, FRSC
 Dr. Carl Klinck, OC, MA, PhD, FRSC
 Mr. R. Ross Munro, OC, OBE
 Dr. John G. McCreary, OC, MD, DSc, LLD, FRCP
 Mr. John H. Newmark, OC
 Dr. J. Christopher Pratt, OC, BFA, ARCA
 Dr. Horace E. Read, OC, OBE, QC, SJD, DCL, LLD
 Mrs. Doris Shadbolt, OC, DFA

Members

Mrs. E. Allie Ahern, CM
 Mr. Gregory Anaka, CM, CD
 Dr. Charles Beil, CM, DUC
 Mrs. Myra M. Bennett, CM, SRN, MBE
 M. Jacques Bouchard, CM
 M. André Boyer, CM
 Superintendent James A. Churchman (Ret'd), CM,
 MM
 Dr. Ivan H. Crowell, CM, AM, PLD
 M. José Delaquerrière, CM
 M. le docteur Louis-Philippe Dionne, CM, MD
 Mr. Bernard Bronislaw Dubiński, CM, QC, LLB
 Dr. W. Allen Fisher, CM, BA, LLD
 Mr. Alvan Gamble, CM, FAPHA
 Mr. Melvin Gardiner, CM
 M. le docteur Dominique Gauthier, CM, MD, DSc
 Mr. William H. Giles, CM, QC, MA
 Dr. W.G. Hardy, CM, MA, PhD, FIAL, LLD

Order of Canada (concluded)

Dr. Florence J. Haslam, CM, MD, BSc
 Mrs. Pearl Hodgson, CM
 Dr. Roy Ivor, CM, DSc
 Mr. Fred Jarrett, CM
 M. Claude Jourdain, CM, LLL
 Mr. Michael P. Kartusch, CM, CD
 Brother Methodius Koziak, CM, FSC, CD
 Mr. Herbert K. Legg, CM
 Miss Alice M.S. Lighthall, CM
 Mr. Stephen A. Magnacca, CM, ED, CD
 Mr. Charles A.G. Matthews, CM
 Dr. Christine Meikle, CM, LLD
 Mlle Marguerite Michaud, CM, MA, PhD, LLD, EdD
 Mr. Vernon Mcllwraith, CM
 Mrs. Mae F. McKay, CM
 Brigadier-General William W. Reid, CM, DSO, ED, BA
 M. René Richard, CM
 Mr. Bruce Robertson, CM
 Dr. J.A. Tallon, CM, MD, PhL, FRCS, FACS, FICS
 Mr. Ronald Turcotte, CM
 Miss Joyce Turpin, CM, BEM
 Miss Annette Walls, CM
 Warrant Officer Wilhelm F. Weiler, CM

ORDER OF MILITARY MERIT**Appointment Date June 13, 1973****Commanders**

Major-General John Wilmer Browning Barr, CMM, MD, CD, QHP
 Major-général Joseph Paul Emile Bernatchez, CBE, CMM, DSO, CD
 Lieutenant-General A. Chester Hull, CMM, DFC, CD
 Brigadier-General George Charles Piercey, CMM, ED, CD
 Brigadier-General Jack Leslie Summers, CMM, MC, CD
 Major-General Robert Walter Timbrell, CMM, DSC, CD

Officers

Lieutenant-Colonel Stewart Brett Alsgard, MMM, CD
 Major Anne Marie Bélanger, OMM, CD
 Lieutenant-colonel Joseph Hildège Eugène André Bordeleau, OMM, CD
 Lieutenant-Colonel Orville Cecil Brown, OMM, CD
 Major John Christian Eggenberger, OMM, CD
 Lieutenant-Colonel James Arthur Fox, OMM, CD
 Captain Keith Trevor Gathercole, OMM
 Lieutenant-Colonel Edmund Gilbert Gigg, OMM, CD
 Colonel William Arthur Hockney, OMM, CD
 Lieutenant-colonel Joseph Roland Leclerc, MC, OMM, CD
 Capitaine Joseph Jacques André Legault, OMM
 Major William Leslie Monkhouse, OMM, CD
 Captain John Thomas Moore, OMM, CD

Colonel Donald Angus Maciver, OMM, CD
 Lieutenant-Colonel Helen Elizabeth McCaffrey, OMM, CD
 Major John McManus, OMM, CD
 Major Alexander Knox Patterson, OMM, CD
 Lieutenant-Colonel Ronald Joseph Richardson, OMM, CD
 Colonel Andrew William Ross, OMM, VRD
 Colonel Joseph Arthur St-Aubin, OMM, CD
 Major Joseph Charles Auguste Alexander Taschereau, OMM, CD
 Major Gerald Edward Watson, OMM, CD
 Captain Trevor Lewis White, OMM, CD

Members

Warrant Officer Ronald Sydney Anderson, MMM, CD
 Master Warrant Officer Ambrose Augustine Atkins, MMM, CD
 Master Warrant Officer Edmund Alphonse Bast, MMM, CD
 Chief Warrant Officer Frank Bauer, MMM, CD
 Chief Warrant Officer Aubury Remington Beeby, MMM, CD
 Sergeant Gaston Bergeron, MMM, CD
 Adjudant-chef Joseph Rodolphe Guy Blanchette, MMM, CD
 Master Warrant Officer Arthur Henry Boon, MMM, CD
 Master Warrant Officer Denis Bradley, MMM, CD
 Master Warrant Officer Edward Brien, MMM, CD
 Sergeant Joseph Benjamin Brisson, MMM, CD
 Chief Warrant Officer Edward Andrew Brown, MMM, CD
 Sergeant Robert Stuart Burt, MMM, CD
 Corporal Joseph Earl Chartier, MMM
 Sergeant Joseph Albert Chiasson, MMM, CD
 Master Warrant Officer Kenith Wayne Clark, MMM, CD
 Adjudant-chef Joseph Hector Bernard Dansereau, MMM, CD
 Chief Warrant Officer Andrew Danyleyko, MMM, CD
 Chief Warrant Officer William Demmy, MMM, CD
 Master Corporal James Clifton Duff, MMM, CD
 Master Warrant Officer Donald Lee Dygert, MMM, CD
 Corporal Robert Keith Evans, MMM
 Sergeant Merlyn Frederick Bertram Fox, MMM, CD
 Master Warrant Officer Ronald Francis, MMM, CD
 Sergeant Ernest Everett Fry, MMM, CD
 Master Corporal John Patrick Gillis, MMM, CD
 Warrant Officer Gerald Joseph Gonyea, MMM, CD
 Sergeant Donald Leroy Grant, MMM, CD
 Caporal Pierre Jacques Gratton, MMM, CD
 Warrant Officer Douglas William Hartt, MMM, CD
 Warrant Officer William Cameron Hay, MMM, CD
 Sergeant Wilfred Ian Willis Hetman, MMM
 Corporal George Angus Howard, MMM, CD
 Warrant Officer Alan Geoffrey Hutton, MMM, CD
 Warrant Officer Donald Bruce Hyndman, MMM, CD

Order of Military Merit
(continued)

Warrant Officer Robert Joseph Janik, MMM, CD
Sergeant Georges Etienne Joseph Lafrance, MMM, CD
Caporal Jean Valmond Bernard Langis, MMM, CD
Adjudant-chef Georges Etienne Latulippe, MMM, CD
Adjudant-chef Philippe Latulippe, MMM, CD
Private Barry Dale Lightfoot, MMM
Chief Warrant Officer Ross Stanley Lines, MMM, CD
Adjudant-chef Joseph Guy Mainville, MMM, CD
Sergeant Joseph Raymond Claude Melançon, MMM, CD
Adjudant-maître Joseph Robert Roland Marcel Rosaire Meloche, MMM, CD
Master Corporal Clarence Milton Moore, MMM, CD
Chief Warrant Officer Claude Richard Muncey, MMM, CD
Sergeant Richard Douglas MacMillan, MMM, CD
Warrant Officer James Robert MacPhee, MMM, CD
Chief Warrant Officer Michael Oswald McDonald, MMM, CD
Warrant Officer Edward Alonzo McDow, MMM, CD
Master Warrant Officer Alfred McMillan, MMM, CD
Sergeant Ernest Leo McMurrer, MMM, CD
Master Warrant Officer John Hamilton Newman, MMM, CD
Caporal Joseph Charles Auguste Parent, MMM, CD
Warrant Officer Roger Ivan Pelletier, MMM, CD
Caporal Joseph Émile Pitre, MMM, CD
Master Warrant Officer John Gerald Pizzariello, MMM, CD
Sergeant William Pokol, MMM, CD
Master Warrant Officer Victor James Ramsbottom, MMM, CD
Chief Warrant Officer James Patrick Regan, MMM, CD
Chief Warrant Officer Alexander Eugene Regnier, MMM, CD
Warrant Officer Joseph Earl Renaud, MMM, CD
Chief Warrant Officer Norman Rudolph Ronberg, MMM, CD
Master Warrant Officer Clifford Roper, MMM, CD
Chief Warrant Officer Marcel Thomas St. Hilaire, MMM, CD
Warrant Officer Paul Schaffer, MMM, CD
Warrant Officer John Lewis Scoffin, MMM, CD
Chief Warrant Officer Kitty Kathleen Sebersky, MMM, CD
Chief Warrant Officer Robert Joseph Slaney, MMM, CD
Chief Warrant Officer Edward John Smith, MMM, CD
Master Warrant Officer Eldon Weston Stewart, MMM, CD

Chief Warrant Officer James Ross Stewart, MMM, CD
Corporal William Herbert Wayne Stocker, MMM, CD
Master Warrant Officer John Alexander Stronach, MMM, CD
Chief Warrant Officer Lloyd Edward Swihart, MMM, CD
Sergeant John Patrick Thompson, MMM, CD
Master Warrant Officer Colleen Mary Bryce Torrens, MMM, CD
Adjudant Joseph Charles Henri Vezina, MMM, CD
Corporal Ronald George Walker, MMM
Corporal Joseph Edward Warnke, MMM
Corporal Donald Edward Watson, MMM, CD
Master Warrant Officer Anthony Watters, MMM, CD
Chief Warrant Officer Lloyd John Woodson, MMM, CD

Appointment Date December 13, 1973

Commanders

Major-General Duncan Alastair McAlpine, CMM, CD
Brigadier-General Robert Errington Mooney, CMM, CD
Brigadier-General William Horace Vincent, CMM, CD

Officers

Major Dorothy May Allan, OMM, CD
Colonel John Allan, OMM, CD
Major Daniel Michael Campbell, OMM, AFC, CD
Major Ford William Carr-Hilton, OMM, CD
Major Philip Kay, OMM, CD
Lieutenant-colonel intérimaire Léopold Raynald Langlois, OMM, CD
Colonel Dan Gordon Loomis, MC, OMM, CD
Major Andrew MacLean, OMM, CD
Major Paul Armand Reny, OMM, CD
Chief Warrant Officer Leo Joseph Vallee, OMM, MM, CD
Lieutenant-Colonel Henry William Vondette, OMM, CD

Members

Sergeant Sidney Charles Barnes, MMM, CD
Captain George William Barr, MMM, CD
Caporal Joseph André Albert Benoit Bélanger, MMM, CD
Captain Ian Paterson Bell Buckingham, MMM
Master Corporal Roderick James Campbell, MMM, CD
Sergeant Eugene Albert Louis Jules Van Cauwenbergh, MMM, CD
Sergeant Peter Anthony Comstock, MMM, CD
Corporal Robert Allan Dale, MMM, CD
Caporal-chef Marcel Joseph Albert Claude Demers, MMM, CD
Caporal-chef Joseph Paul André Duhaime, MMM
Captain William George Dunlop, MMM, CD

Order of Military Merit
(concluded)

Capitaine Joseph Edouard Herménégilde Dussault, MMM, CD
 Chief Warrant Officer John William Ellis, MMM, CD
 Warrant Officer Edward Roger Forcier, MMM, CD
 Master Warrant Officer Keith William Freer, MMM
 Corporal Earl Gray, MMM, CD
 Chief Warrant Officer William Freeman Hannan, MMM, CD
 Master Warrant Officer Donald Reginald Hillier, MMM, CD
 Master Warrant Officer James Eldridge Jackson, MMM, CD
 Captain Richard William Kaye, MMM, CD
 Adjudant-chef Aural Lévesque, MMM, CD
 Chief Warrant Officer Malcolm Arthur Macaulay, MMM, CD
 Captain Alexander George Miller, MMM
 Master Warrant Officer Frederick George Denys Nash, MMM, CD
 Warrant Officer Paul Charles O'Sullivan, MMM, CD
 Chief Warrant Officer Timothy Parynuick, MMM, CD
 Master Corporal Charles Edward Byron Pickett, MMM, CD
 Master Corporal Ronald Peter Joseph Pupetz, MMM
 Warrant Officer Alfred Ernest Scott, MMM, CD
 Captain Arthur Harcourt Carington Smith, MMM, CD
 Caporal-chef Joseph Denis Gérard Tétreault, MMM, CD
 Sergeant Robert Lawrence Timms, MMM, CD
 Adjudant Gilbert Léopold Trinqué, MMM, CD
 Master Corporal Jack Carl Wilson, MMM, CD

BRAVERY DECORATIONS

Appointment Date March 5, 1973

Star of Courage

Corporal Miroslaw Mirek Lesiak, SC
 M. Normand Maltais, EC
 Miss Irene Paterson, SC
 Master Corporal Roderick Villon Verchere, SC

Medal of Bravery

Mr. John Walter Bruce, MB
 M. Jean-Paul Chauvette, MB
 Captain John Ross Farncombe, MB

Mr. Henry Charles Hudson, MB
 Mr. Edgar Jubinville, MB
 Mr. Boas Kairtok, MB
 Mr. Gregory Kroone, MB
 Mr. Ronald Thomas LeBlanc, MB
 Mr. Kenneth Miller, MB
 Captain Palmer Leonard Wenaas, MB, CD

Appointment Date July 3, 1973

Star of Courage

Mr. Malcolm Rodney Aspeslet, SC
 Corporal Paul Anthony Baiden, SC
 Mr. Edward Joseph Duff, SC
 Mr. Dwayne Emery, SC
 Miss Geraldine Moddejonge, SC (Posthumous)
 Mr. Melvin Douglas Paradis, SC

Medal of Bravery

Constable Peter Carberry, MB
 Mr. William J. Haig, MB
 Mr. Scott Ilingsworth Hopper, MB
 M. Joseph Charles Robert Julien, MB
 Private Peter Albert Maillet, MB
 Corporal Theodore Joseph Miller, MB
 Mr. Robert Alexander Nahrgang, MB
 Miss Donna Claudette Potts, MB
 Mr. Paul Serveau, MB
 Mr. Wilfred Jack Styve, MB
 Mr. John Wayne Wieler, MB

Appointment Date September 24, 1973

Star of Courage

Mr. Garry Babcock, SC (Posthumous)
 Madame Ula Boudreau, EC (Posthumous)
 Mr. Thomas Smart, SC (Posthumous)

Medal of Bravery

Master Corporal Joseph Daniel Robert April, MB, CD
 Mr. William Campbell, MB
 Miss Margaret Cornish, MB
 Mr. Gregory Stuart Cousineau, MB
 Miss Ann Dale-Harris, MB
 Corporal Ihor Yaroslaw Dedish, MB
 Mr. Terrance William Fagan, MB
 Mr. James Flaherty, MB
 Mr. John Maloney Jr., MB
 Police Constable Joseph O'Hagan, MB
 Mr. Charles Edward Petersen, MB
 Mr. Claude Savard, MB
 Mr. Edward Sokolowski, MB
 Mr. Clifton Walter Taylor, MB
 Mr. Lawrence Albert Taylor, MB
 Mr. Eric Thomas Weir, MB

Appendix 5

Diplomatic and consular representation

The following is a list of countries and organizations with which Canada maintains diplomatic, consular and/or trade representation, the status of the representatives and the postal addresses of their offices in Canada and Canadian offices abroad.

Canadian representatives abroad

Afghanistan

Ambassador: c/o Canadian Embassy, Diplomatic Enclave No. 5, Islamabad, Pakistan.

Algeria

Ambassador: PO Box 225, Alger Gare, Alger.

Argentina

Ambassador: Casilla de Correo 1598, Buenos Aires.

Australia

High Commissioner: Commonwealth Ave., Canberra ACT 2600.

Austria

Ambassador: Luegerring 10, 1010 Vienna.

Bahamas

High Commissioner: c/o Canadian High Commission, PO Box 1500, Kingston 10, Jamaica.

Bangladesh

High Commissioner: PO Box 569, General Post Office, Dacca-2.

Barbados

High Commissioner: PO Box 404 Bridgetown, Barbados.

Belgium

Ambassador: Rue de Loxum 6, Brussels 1000.

Belize

Commissioner: c/o Canadian High Commission, PO Box 1500, Kingston 10, Jamaica.

Bolivia

Ambassador: c/o Canadian Embassy, Edificio El Pacifico-Washington, 8th floor, Plaza Washington, Lima, Peru.

Botswana

High Commissioner: c/o Canadian High Commission, PO Box 26005, Arcadia, Pretoria, South Africa.

Brazil

Ambassador: Caixa Postal 07-0961, 70000, Brasilia DF.

Britain

High Commissioner: Canada House, Trafalgar Square, London, 1Y 5BJ.

Bulgaria

Ambassador: c/o Canadian Embassy, Proleterskih Brigada 69, Belgrade, Yugoslavia.

Burma

Ambassador: c/o Canadian High Commission, AIA Building, Kuala Lumpur, Malaysia.

Burundi

Ambassador: c/o Canadian Embassy, Édifice Shell, coin av. Wangata et boul. du 30-juin, Kinshasa, Republic of Zaïre.

Cameroon

Ambassador: PO Box 572, Yaoundé.

Central African Republic

Ambassador: c/o Canadian Embassy, PO Box 572, Yaoundé, Cameroon.

Chad

Ambassador: c/o Canadian Embassy, PO Box 572, Yaoundé, Cameroon.

Chile

Ambassador: Casilla 427, Santiago de Chile.

People's Republic of China

Ambassador: San Li Tun No. 16, Peking.

Colombia

Ambassador: Apartado Aéreo 53531-Bogota 2.

Conference on Security and Co-operation in Europe

Ambassador: 10A avenue de Budé, 1202 Geneva.

People's Republic of the Congo

Ambassador: c/o Canadian Embassy, Édifice Shell, coin av. Wangata et boul. du 30-juin, Kinshasa, Republic of Zaïre.

Costa Rica

Ambassador: Apartado Postal 10303, San José.

Cuba

Ambassador: c/o PO Box 499 (HVA), Ottawa K1N 8T7.

Cyprus

High Commissioner: c/o Canadian High Commission, 84 Hahashmonaim Street, Tel Aviv, Israel.

Czechoslovakia

Ambassador: Mickiewiczova 6, Prague.

Dahomey

Ambassador: c/o Canadian Embassy, E 115/3 Independence Ave., Accra, Ghana.

Denmark

Ambassador: Prinsesse Maries Allé 2, 1908 Copenhagen.

Dominican Republic

Ambassador: c/o Canadian Embassy, Avenida La Estancia No. 10, 16a piso, Ciudad Comercial Tamanaco, Caracas, Venezuela.

Ecuador

Ambassador: c/o Canadian Embassy, Calle 58, No. 10-42, Bogota, Colombia.

Arab Republic of Egypt

Ambassador: Kasr el Doubara Post Office, Cairo.

El Salvador

Ambassador: c/o Canadian Embassy, 6th floor,
Cronos Building, Calle 3 y Avenida Central,
San José, Costa Rica.

Ethiopia

Ambassador: PO Box 1130, Addis Ababa.

European Communities

The European Economic Community
The European Atomic Energy Community
The European Coal and Steel Community
Head of Mission: The Mission of Canada to the
European Communities, 1040 Brussels,
Belgium.

Fiji

High Commissioner: c/o Canadian High
Commission, Commonwealth Ave., Canberra
ACT 2600, Australia.

Finland

Ambassador: P Esplanadi 25B, 00100 Helsinki 10.

France

Ambassador: 35, avenue Montaigne, 75008 Paris.

Gabon

Ambassador: c/o Canadian Embassy, PO Box 572,
Yaoundé, Cameroon.

Gambia

High Commissioner: c/o Canadian Embassy, 45 av.
de la République, Dakar, Sénégal.

Federal Republic of Germany

Ambassador: Friedrich-Wilhelm-Strasse 18, 53
Bonn.

Ghana

High Commissioner: PO Box 1639, Accra.

Greece

Ambassador: 4 Ioannou Ghennadiou St. and
Ypsilantou, Athens 140.

Guatemala

Ambassador: PO Box 400, Guatemala.

Guinea

Ambassador: c/o Canadian Embassy, 45 av. de la
République, Dakar, Sénégal.

Guyana

High Commissioner: PO Box 660, Georgetown.

Haiti

Ambassador: CP 826, Port-au-Prince.

Holy See

Ambassador: Largo Messico 7, (Viale di Villa
Grazioli) 00198, Rome.

Honduras

Ambassador: c/o Canadian Embassy, 6th floor,
Cronos Building, Calle 3 y Avenida Central,
San José, Costa Rica.

Hong Kong

Commissioner: PO Box 20264, Hennessy Road Post
Office, Hong Kong.

Hungary

Ambassador: Budakeszi, u. 55/d P 8, Budapest 1021.

Iceland

Ambassador: Postuttak Oslo 1, Norway.

India

High Commissioner: PO Box 5207, New Delhi.

Indonesia

Ambassador: Jalan Budi Kemuliaan No. 6,
Jakarta.

Iran

Ambassador: PO Box 1610, Tehran.

Iraq

Ambassador: c/o CP 2300, Beirut, Lebanon.

Ireland

Ambassador: 65 St. Stephens Green, Dublin 2.

Israel

Ambassador: 84 Hahashmonaim Street, Tel Aviv.

Italy

Ambassador: Via GB de Rossi 27, 00161 Rome.

Ivory Coast

Ambassador: BP 21194, Abidjan.

Jamaica

High Commissioner: PO Box 1500, Kingston 10.

Japan

Ambassador: c/o Akasaka Post Office, Tokyo.

Jordan

Ambassador: c/o Canadian Embassy, Immeuble
Sabbagh, rue Hamra, Beirut, Lebanon.

Kenya

High Commissioner: PO Box 30481, Nairobi.

Korea

Ambassador: CPO Box 6299, Seoul 100.

Kuwait

Ambassador: c/o Canadian Embassy, PO Box 1610,
Tehran, Iran.

Laos

Acting Commissioner: CP 389, Vientiane.

Lebanon

Ambassador: CP 2300, Beirut.

Lesotho

High Commissioner: c/o Canadian High
Commission, PO Box 26006, Arcadia, Pretoria,
South Africa.

Liberia

Ambassador: c/o Canadian Embassy, BP 21194,
Abidjan, Ivory Coast.

Libyan Arab Republic

Ambassador: c/o Canadian Embassy, Kasr el
Doubara Post Office, Cairo, Arab Republic of
Egypt.

Luxembourg

Ambassador: c/o Canadian Embassy, rue de Loxum
6, B-1000, Brussels, Belgium.

Macao

Consul: c/o Commission for Canada, PO Box 20264,
Hennessy Road Post Office, Hong Kong.

Madagascar

Ambassador: c/o Canadian Embassy, African Solidarity Bldg., Hailé Sélassié I Square, Addis Ababa, Ethiopia.

Malawi

High Commissioner: c/o Canadian High Commission, PO Box 1313, Lusaka, Zambia.

Malaysia

High Commissioner: PO Box 990, Kuala Lumpur.

Mali

Ambassador: c/o Canadian Embassy, 45 av. de la République, Dakar, Sénégal.

Malta

High Commissioner: c/o Canadian High Commission, Via GB de Rossi 27, 00161 Rome, Italy.

Mauritania

Ambassador: c/o Canadian Embassy, 45 av. de la République, Dakar, Sénégal.

Mauritius

High Commissioner: c/o Canadian High Commission, Pan-Africa Insurance Bldg., Independence Avenue, PO Box 1022 Dar-es-Salaam, United Republic of Tanzania.

Mexico

Ambassador: Melchor Ocampo 463-7, Mexico 5, DF.

Monaco

Consul General: c/o Canadian Consulate General, 24, av. du Prado, Marseille 6^e, Bouches-du-Rhône, France.

Mongolia

Ambassador: c/o Canadian Embassy, 23 Starokonyushenny Pereulok, Moscow USSR.

Morocco

Ambassador: BP 553, Rabat-Chellah, Rabat.

Nepal

Ambassador: c/o Canadian Embassy, Shanti Path, Chanakyapuri, New Delhi 21, India.

Netherlands

Ambassador: Sophialaan 7, The Hague.

New Zealand

High Commissioner: PO Box 12-049, Wellington North.

Nicaragua

Ambassador: c/o Canadian Embassy, 6th floor, Cronos Building, Calle 3 y Avenida Central, San José, Costa Rica.

Niger

Ambassador: c/o Canadian Embassy, Immeuble "Le Général", avenue Botreau-Roussel, Abidjan, Ivory Coast.

Nigeria

High Commissioner: PO Box 851, Lagos.

North Atlantic Council

Permanent Representative and Ambassador: 1110 Brussels, Belgium.

Norway

Ambassador: Postuttak, Oslo I.

Organization of American States

Ambassador and Permanent Observer: 1746 Massachusetts Ave. NW, Washington, DC, 20036, USA.

Organization for Economic Co-operation and Development

Ambassador and Permanent Representative: 19, rue de Franqueville, Paris 16^e.

Pakistan

Ambassador: PO Box 1042, GPO, Islamabad.

Panama

Ambassador: c/o Canadian Embassy, 6th floor, Cronos Building, Calle 3 y Avenida Central, San José, Costa Rica.

Paraguay

Ambassador: c/o Canadian Embassy, Brunetta Bldg., Suipacha and Santa Fé, Buenos Aires, Argentina.

Peru

Ambassador: Casilla 1212, Lima.

Philippines

Ambassador: PO Box 971, Commercial Centre, Makati, Rizal.

Poland

Ambassador: Ulica Matejki 1/5, Warsaw, 00-481.

Portugal

Ambassador: Rua Rosa Araujo 2, 6th floor, Lisbon 2.

Romania

Ambassador: c/o Canadian Embassy, Proleterskih Brigada 69, Belgrade, Yugoslavia.

Rwanda

Ambassador: c/o Canadian Embassy, Édifice Shell, coin av. Wangata et boul. du 30-juin, Kinshasa, Republic of Zaïre.

San Marino

Consul: c/o Canadian Embassy, Via GB de Rossi 27, 00161 Rome, Italy.

Saudi Arabia

Ambassador: 6th floor, Office Tower, Commercial and Residential Centre, King Abdul Aziz St., Jeddah.

Senegal

Ambassador: PO Box 3373, Dakar.

Sierra Leone

High Commissioner: c/o Canadian High Commission, Niger House, Tinubu Street, Lagos, Nigeria.

Singapore

High Commissioner: PO Box 845, Singapore.

Somali Republic

Ambassador: c/o Canadian Embassy, Pan Africa Insurance Building, Independence Avenue, Dar-es-Salaam, Tanzania.

South Africa

Ambassador: PO Box 26006, Arcadia, Pretoria.

Spain

Ambassador: Apartado 587, Madrid.

Sri Lanka

High Commissioner: PO Box 1006, Colombo.

Sudan

Ambassador: c/o Canadian Embassy, 6 Sharia Mohamed Fahmi el Sayed, Garden City, Cairo, Arab Republic of Egypt.

Swaziland

High Commissioner: c/o Canadian Embassy, PO Box 26006, Arcadia, Pretoria, South Africa.

Sweden

Ambassador: PO Box 16129, S-10323 Stockholm 16.

Switzerland

Ambassador: 88 Kirchenfeldstrasse 3000 Berne.

Syrian Arab Republic

Ambassador: c/o Canadian Embassy, Immeuble Sabbagh, rue Hamra, Beirut, Lebanon.

United Republic of Tanzania

High Commissioner: PO Box 1022, Dar-es-Salaam.

Thailand

Ambassador: PO Box 2090, Bangkok.

Togo

Ambassador: c/o Canadian Embassy, E 115/3 Independence Ave., Accra, Ghana.

Tonga

High Commissioner: c/o Canadian High Commission, ICI Bldg. Molesworth St., N1 Wellington, New Zealand.

Trinidad and Tobago

High Commissioner: PO Box 1246, Port of Spain.

Tunisia

Ambassador: PO Box 606, Tunis RP.

Turkey

Ambassador: Nenehatun Caddesi No. 75, Gaziosmanpasa, Ankara.

Uganda

High Commissioner: c/o Canadian High Commission, Industrial Promotion Services Bldg., Kimathi St., Nairobi, Kenya.

Union of Soviet Socialist Republics

Ambassador: 23 Starokonyushenny Pereulok, Moscow.

United Nations

Ambassador and Permanent Representative: The Permanent Mission of Canada to the United Nations, 866 United Nations Plaza, Suite 250, New York, NY 10017.

Ambassador and Permanent Representative: Permanent Mission of Canada to the Office of the United Nations at Geneva and to the Conference of the Committee on Disarmament, 10A, avenue de Budé, 1202 Geneva.

Ambassador and Permanent Delegate: Permanent Delegation of Canada to the United Nations Educational, Scientific and Cultural Organization, 1, rue Miollis, Paris XV^e.

Permanent Representative: Permanent Mission of Canada to the United Nations Industrial Development Organization, Luegerring 10, 1010 Vienna.

Permanent Representative: Permanent Mission of Canada to the International Atomic Energy Agency, Luegerring 10, 1010 Vienna.

United States of America

Ambassador: 1746 Massachusetts Avenue NW, Washington, DC 20036.

Upper Volta

Ambassador: BP 21194, Abidjan, Ivory Coast.

Uruguay

Ambassador: c/o Canadian Embassy, Brunetta Bldg., Suipacha and Santa Fé, Buenos Aires, Argentina.

Venezuela

Ambassador: Apartado del Este No. 62302, Caracas.

Democratic Republic of Vietnam

Ambassador: c/o Canadian Embassy, San Li Tun No. 16, People's Republic of China.

Republic of Vietnam

Ambassador: PO Box 220, Saigon.

West Indies (Associated States)

Commissioner: c/o The Canadian Commission, 72 South Quay, Port of Spain, Trinidad.

Western Samoa

High Commissioner: c/o Canadian High Commission, ICI Bldg., Molesworth St., N1 Wellington, New Zealand.

Yugoslavia

Ambassador: Proleterskih Brigada 69, Belgrade.

Republic of Zaïre

Ambassador: PO Box 8341, Kinshasa.

Zambia

High Commissioner: PO Box 1313, Lusaka.

Representatives of foreign countries in Canada

Afghanistan

Ambassador: 2341 Wyoming Ave. NW, Washington, DC 20008, USA.

Algeria

Ambassador: 435 Daly Ave., Ottawa, K1N 6H3.

Argentina

Ambassador: 10 Driveway, Ottawa, K2P 1C7.

Australia

High Commissioner: 90 Sparks St., Suite 600, Ottawa, K1P 5B4.

Austria

Ambassador: 445 Wilbrod St., Ottawa, K1N 6M7.

Bangladesh

High Commissioner: 85 Range Rd., Suite 1007,
Ottawa, K1N 8J6.

Barbados

High Commissioner: Suite 200, 151 Slater St.,
Ottawa, K1P 5H3.

Belgium

Ambassador: 85 Range Rd., Suites 601 to 604,
Ottawa, K1N 8J6.

Bolivia

Chargé d'Affaires: 115 Abbey Hill Drive,
Hazeldean, PO Box 154.

Botswana

High Commissioner: c/o Embassy of the Republic of
Botswana, Van Ness Centre, 4301 Connecticut
Ave. NW, Suite 404, Washington, DC 20008,
USA.

Brazil

Ambassador: 450 Wilbrod St., Ottawa, K1N 6M8.

Britain

High Commissioner: 80 Elgin St., Ottawa, K1P 5K7.

Bulgaria

Ambassador: 325 Stewart St., Ottawa, K1N 6K5.

Burma

Ambassador: 116 Albert St., Royal Trust Bldg.,
Second Floor, Ottawa, K1P 5G3.

Burundi

Ambassador: c/o Permanent Mission of Burundi to
the United Nations, 485 Fifth Avenue, New
York, NY, 10017, USA.

Cameroon

Ambassador: 470 Wilbrod St., Ottawa, K1N 6M8.

Central African Republic

Ambassador: 275 MacLaren St., Ottawa, K2P 0L9.

Chad

Ambassador: 1132 New Hampshire Ave. NW,
Washington, DC, 20037, USA.

Chile

Ambassador: 56 Sparks St., Suites 203 and 204,
Ottawa, K1P 5A9.

People's Republic of China

Ambassador: 411-415 St. Andrew St., Ottawa, K1N
5H3.

Colombia

Ambassador: Suite 112, 140 Wellington St., Ottawa,
K1P 5A2.

Congo

Ambassador: c/o Permanent Mission of the Congo
to the United Nations, 444 Madison Ave., Suite
1604, New York, NY, 10017, USA.

Costa Rica

Ambassador: 2112 S St. NW, Washington, DC,
20008, USA.

Cuba

Ambassador: 700 Echo Dr., Ottawa, K1S 1P3.

Cyprus

High Commissioner: c/o Embassy of Cyprus, 2211
R Street NW, Washington, DC, 20008, USA.

Czechoslovakia

Ambassador: 171 Clemow Ave., Ottawa, K1S 2B3.

Dahomey

Ambassador: 130 Albert St., Suite 508, Ottawa, K1P
5G4.

Denmark

Ambassador: Suite 702, 85 Range Rd., Ottawa, K1N
8J6.

Dominican Republic

Ambassador: 200 Rideau Terrace, Suite 202, Ottawa,
K1M 0Z3.

Arab Republic of Egypt

Ambassador: 454 Laurier Ave. E, Ottawa, K1N
6R3.

El Salvador

Ambassador: The Driveway Place, 350 Driveway,
Suite 101, Ottawa, K1S 3N1.

Fiji

High Commissioner: c/o Fiji Mission to the United
Nations, 845 Third Avenue, 19th floor, New
York, NY, 10022, USA.

Finland

Ambassador: 85 Range Rd., Suite 605, Ottawa, K1N
8J6.

France

Ambassador: 42 Sussex Dr., Ottawa, K1M 2C9.

Gabon

Ambassador: 4 Range Rd., Ottawa, K1N 8J5.

Federal Republic of Germany

Ambassador: 1 Waverley St., Ottawa, K2P 0T8.

Ghana

High Commissioner: 85 Range Rd., Suite 810,
Ottawa, K1N 8J6.

Greece

Ambassador: Château Laurier Hotel, Suite 110,
Ottawa, K1N 8S7.

Grenada

High Commissioner: 227 Laurier Ave. W, Suite 207,
Ottawa, K1P 5J7.

Guatemala

Ambassador: c/o Embassy of Guatemala, 2220 R
Street NW, Washington, DC, 20008, USA.

Guinea

Ambassador: c/o Embassy of the Republic of
Guinea, 2112 Leroy Place NW, Washington,
DC, 20008, USA.

Guyana

High Commissioner: Burnside Bldg., 151 Slater St.,
Suite 309, Ottawa, K1P 5H3.

Haiti

Ambassador: 150 Driveway, Suite 111, Ottawa, K2P
1C7.

Holy See

Apostolic Nuncio: 724 Manor Ave., Rockcliffe Park,
K1M 0E3.

Honduras

Ambassador: c/o Embassy of Honduras, 4715-16th
St. NW, Washington, DC, 20011, USA.

Hungary

Ambassador: 7 Delaware Ave., Ottawa, K2P 0Z2.

Iceland

Ambassador: c/o Embassy of Iceland, 2022
Connecticut Ave. NW, Washington, DC,
20008, USA.

India

High Commissioner: 200 MacLaren St., Ottawa,
K2P 0L6.

Indonesia

Ambassador: 85 Range Rd., Suites 106-111, and 208,
Ottawa, K1N 8J6.

Iran

Ambassador: 85 Range Rd., Suites 307-308, Ottawa,
K1N 8J6.

Iraq

Ambassador: 377 Stewart St., Ottawa, K1N 6K9.

Ireland

Ambassador: 170 Metcalfe St., Ottawa, K2P 1P3.

Israel

Ambassador: 45 Powell Ave., Ottawa, K1S 1Z9.

Italy

Ambassador: 170 Laurier Ave. W, Ottawa, K1P
5V5.

Ivory Coast

Ambassador: 381 Wilbrod St., Ottawa, K1N 6M6.

Jamaica

High Commissioner: 85 Range Rd., Suites 203, 204,
Ottawa, K1N 8J6.

Japan

Ambassador: 75 Albert St., Suite 1005, Ottawa, K1P
5E7.

Jordan

Ambassador: c/o Embassy of the Hashemite
Kingdom of Jordan, 2319 Wyoming Ave. NW,
Washington, DC, 20008, USA.

Kenya

High Commissioner: c/o The Permanent Mission of
Kenya to the United Nations, 866 United
Nations Plaza, Room 486, New York, NY,
10017, USA.

Korea

Ambassador: 151 Slater St., Suite 608, Ottawa, K1P
5H3.

Kuwait

Ambassador: c/o Embassy of Kuwait, 2940 Tilden
St. NW, Washington, DC, 20008, USA.

Lebanon

Ambassador: 640 Lyon St., Ottawa, K1S 3Z5.

Lesotho

High Commissioner: c/o Embassy of the Kingdom
of Lesotho, Caravel Bldg., Suite 300, 1601
Connecticut Ave. NW, Washington, DC,
20009, USA.

Liberia

Ambassador: c/o Embassy of Liberia, 5201-16th St.
NW, Washington, DC, 20011, USA.

Libya

Ambassador: c/o Permanent Mission of the Libyan
Arab Republic to the United Nations, 866
United Nations Plaza, New York, NY, 10017,
USA.

Luxembourg

Ambassador: c/o Embassy of Luxembourg, 2210
Massachusetts Ave. NW, Washington, DC,
20008, USA.

Madagascar

Ambassador: c/o Permanent Mission of the
Malagasy Republic to the United Nations, 801
Second Ave., Suite 404, New York, NY, 10017,
USA.

Malawi

High Commissioner: c/o Permanent Mission of the
Republic of Malawi to the United Nations, 777
Third Ave., New York, NY, 10017, USA.

Malaysia

High Commissioner: 130 Albert St., Suite 1001,
Ottawa, K1P 5G4.

Mali

Ambassador: c/o Embassy of Mali, 2130 R Street
NW, Washington, DC, 20008, USA.

Malta

High Commissioner: c/o Embassy of Malta,
Chaussée de Charleroi 92, 1060 Brussels,
Belgium.

Mauritania

Ambassador: c/o The Permanent Mission of the
Islamic Republic of Mauritania to the United
Nations, 8 W 40th St., 18th Floor, New York,
NY, 10018, USA.

Mauritius

High Commissioner: c/o Embassy of Mauritius,
Suite 134 Van Ness Centre, 4301 Connecticut
Ave. NW, Washington, DC, 20008, USA.

Mexico

Ambassador: 130 Albert St., Suite 206, Ottawa, K1P
5G4.

Mongolia

Ambassador: 7 Kensington Court, London, W8
5DL, England.

Morocco

Ambassador: 38 Range Rd., Ottawa, K1N 8J4.

Nepal

Ambassador: c/o Embassy of Nepal, 2131 Leroy
Place NW, Washington, DC, 20008, USA.

Netherlands

Ambassador: 275 Slater St., Ottawa, K1P 5H9.

New Zealand

High Commissioner: 77 Metcalfe St., Suite 804,
Ottawa, K1P 5L6.

Nicaragua

Ambassador: c/o Embassy of Nicaragua, 1627 New
Hampshire Ave. NW, Washington, DC, 20009,
USA.

Niger

Ambassador: 190 Lisgar St., Ottawa, K2P 0C4.

Nigeria

High Commissioner: Place de Ville, Tower A, 320
Queen St., Suite 2000, Ottawa, K1R 5A3.

Norway

Ambassador: 140 Wellington St., Suite 700, Victoria
Bldg., Ottawa, K1P 5A2.

Oman

Ambassador: c/o The Permanent Mission of Oman
to the United Nations, 605 Third Ave., Room
3304, New York, NY, 10016, USA.

Pakistan

Ambassador: 505 Wilbrod St., Ottawa, K1N 7G8.

Panama

Ambassador: c/o Embassy of Panama, 2862 McGill
Terrace NW, Washington, DC, 20008, USA.

Peru

Ambassador: 539 Island Park Dr., Ottawa, K1Y 0B6.

Philippines

Ambassador: 130 Albert St., Suite 607, Ottawa, K1P
5G4.

Poland

Ambassador: 443 Daly Ave., Ottawa, K1N 6H3.

Portugal

Ambassador: 645 Island Park Dr., Ottawa, K1Y
0C2.

Qatar

Ambassador: c/o The Permanent Mission of Qatar
to the United Nations, 845 Third Ave., New
York, NY, 10022, USA.

Romania

Ambassador: 473-475 Wilbrod St., Ottawa, K1N
6N1.

Rwanda

Ambassador: 130 Albert St., Suite 1203, Ottawa,
K1P 5G4.

Senegal

Ambassador: c/o Embassy of the Republic of
Senegal, 2112 Wyoming Ave. NW,
Washington, DC, 20008, USA.

Sierra Leone

High Commissioner: c/o The Permanent Mission of
Sierra Leone to the United Nations, 919 Third
Ave., 22nd Floor, New York, NY, 10022, USA.

Singapore

High Commissioner: c/o The Permanent Mission of
Singapore to the United Nations, 711 Third
Ave., New York, NY, 10017, USA.

Somalia

Ambassador: c/o The Permanent Mission of the
Somali Republic to the United Nations, 236 E
46th St., New York, NY, 10017, USA.

South Africa

Ambassador: 15 Sussex Dr., Ottawa, K1M 1M8.

Spain

Ambassador: 124 Springfield Rd., Suites 310-312,
Ottawa, K1M 2C8.

Sri Lanka

High Commissioner: 85 Range Rd., Suites 102-104,
Ottawa, K1N 8J6.

Sudan

Ambassador: c/o Embassy of the Democratic
Republic of the Sudan, 600 New Hampshire
Ave. NW, Suite 400, Washington, DC,
20037, USA.

Swaziland

High Commissioner: c/o Embassy of the Kingdom
of Swaziland, Suite 441, Van Ness Centre, 4301
Connecticut Ave., NW, Washington, DC,
20008, USA.

Sweden

Ambassador: 140 Wellington St., Suite 604, Ottawa,
K1P 5A2.

Switzerland

Ambassador: 5 Marlborough Ave., Ottawa, K1N
8E6.

Syria

Ambassador: c/o Permanent Mission of the Syrian
Arab Republic to the United Nations, 150 E
58th Street, Suite 1500, New York, NY, 10022,
USA.

Tanzania

High Commissioner: 50 Range Rd., Ottawa, K1N
8J4.

Thailand

Ambassador: 85 Range Rd., Suite 704, Ottawa, K1N
8J6.

Togo

Ambassador: c/o Embassy of the Republic of Togo,
2208 Massachusetts Ave. NW, Washington,
DC, 20008, USA.

Trinidad and Tobago

High Commissioner: 75 Albert St., Suite 508,
Ottawa, K1P 5R5.

Tunisia

Ambassador: 515 O'Connor St., Ottawa, K1S 3P8.

Turkey

Ambassador: 197 Wurtemberg St., Ottawa, K1N
8L9.

Uganda

High Commissioner: 170 Laurier Ave. W, Suite 601,
Ottawa, K1P 5V5.

Union of Soviet Socialist Republics

Ambassador: 285 Charlotte St., Ottawa, K1N 8L5.

United States of America

Ambassador: 100 Wellington St., Ottawa, K1P 5T1.

Upper Volta

Ambassador: 404 Queen St., Ottawa, K1R 5A7.

Uruguay

Ambassador: c/o Embassy of Uruguay, 1918 F Street NW, Washington, DC, 20006, USA.

Venezuela

Ambassador: 151 Sparks St., Suite 801, Ottawa, K1P 5E3.

Republic of Vietnam

Ambassador: 2251, R Street NW, Washington, DC, 20008, USA.

People's Democratic Republic of Yemen

Ambassador: c/o Permanent Mission of the People's Democratic Republic of Yemen, 211E 43rd St., Suite 903, New York, NY, 10017, USA.

Yugoslavia

Ambassador: 17 Blackburn Ave., Ottawa, K1N 8A2.

Republic of Zaïre

Ambassador: 18 Range Rd., Ottawa, K1N 8J3.

Zambia

High Commissioner: 2197 Riverside Dr., Suite 701, Ottawa, K1H 7X3.

Appendix 6

Books about Canada

This basic list of books about Canada, contributed by the National Library of Canada, includes a selection of publications grouped alphabetically by author and arranged under the subject classifications of The arts and the performing arts, Biography, Country and people, Economics, Government and politics, History, Literature, General reference works and Science. Titles are listed in the language in which they are published. The selection includes only books published in 1973 and is limited to about 200 titles. For additional titles, the reader should consult the lists of books in previous editions of the *Canada Year Book* or the monthly or annual editions of *Canadiana*, the national bibliography published by the National Library.

The arts and the performing arts

- Bélair, Michel. *Le nouveau théâtre québécois*. Montréal, Leméac, 1973. 205 p.
- Bell, Michael, comp. *Painters in a new land, from Annapolis Royal to the Klondike*. Toronto, McClelland and Stewart, 1973. 244 p.
- Doat, Jan, comp. *Anthologie' du théâtre québécois, 1606-1970*. Québec, Éditions La Liberté, 1973. 505 p.
- Duval, Paul. *A vision of Canada: the McMichael Canadian collection*. Toronto, Clarke, Irwin, 1973. 176 p.
- Kurelek, William. *O Toronto: paintings and notes*. Toronto, New Press, 1973. 43 p.
- Laforte, Conrad. *La chanson folklorique et les écrivains du XIX^e siècle en France et au Québec*. Montréal, Hurtubise HMH, 1973. 154 p. (Les Cahiers du Québec 12, Collection Ethnologie québécoise, cahier 2)
- Lafrance, André. *Cinéma d'ici*. Montréal, Leméac, Éditions ICI Radio-Canada, 1973. 213 p. (Collection Les beaux-arts)
- Lee, Betty. *Love and whisky: the story of the Dominion Drama Festival*. Toronto, McClelland and Stewart, 1973. 335 p.
- Lefebvre, Germain. *Pellan*. Montréal, Éditions de l'Homme, 1973. 159 p.
- MacDonald, Thoreau. *Thoreau MacDonald: a catalogue of design and illustration*. Toronto, University of Toronto Press, 1973. 190 p.
- Miller, Alfred J. *Braves and buffalo: plains Indian life in 1837; water colors of Alfred J. Miller with descriptive notes by the artist*. Toronto, University of Toronto Press, 1973. 176 p.
- Moir, Gillian et al., comps. *Early Buildings of Manitoba*. Winnipeg, Peguis, 1973. 163 p.
- Napier, Ronald. *A guide to Canada's composers*. Willowdale, Avondale Press, 1973. 50 p.
- Patterson, Nancy-Lou. *Canadian native art: arts and crafts of Canadian Indians and Eskimos*. Don Mills, Collier-Macmillan Canada, 1973. 180 p.
- Porter, John R. et Léopold Desy. *Calvaires et croix de chemins du Québec*. Montréal, Hurtubise HMH, 1973. 256 p.
- Reid, Dennis. *The concise history of Canadian painting*. Toronto, Oxford University Press, 1973. 320 p.
- Vachon, G.A. et al. *Ozias Leduc et Paul-Émile Borduas*. Montréal, Presses de l'Université de Montréal, 1973. 152 p. (Conférences J.A. de Sève, 15-16)

Biography

- Boyle, Harry J. *Memoirs of a Catholic boyhood*. Toronto, Doubleday Canada, 1973. 192 p.
- Bruce, Robert V. *Bell: Alexander Graham Bell and the conquest of solitude*. Toronto, Little Brown, 1973. 564 p.
- Campbell, Maria. *Halfbreed*. Toronto, McClelland and Stewart, 1973. 157 p.
- Day, Douglas. *Malcolm Lowry: a biography*. Toronto, Oxford University Press, 1973. 483 p.
- Dickson, Lovat. *Wilderness man: the strange story of Grey Owl*. Toronto, Macmillan of Canada, 1973. 283 p.
- Gagan, David. *The Denison family of Toronto, 1792-1925*. Toronto, University of Toronto Press, 1973. 113 p.
- Garner, Hugh. *One damn thing after another*. Toronto, McGraw-Hill Ryerson, 1973. 293 p.
- Goudie, Elizabeth. *Woman of Labrador*. Toronto, Peter Martin Associates, 1973. 166 p.
- Hébert, Bruno. *Philippe Hébert, sculpteur*. Montréal, Fides, 1973. 157 p.

- Hunt, Russell and Robert Campbell. *K.C. Irving: the art of the industrialist*. Toronto, McClelland and Stewart, 1973. 197 p.
- Macintyre, Duncan E. *End of steel*. Toronto, Peter Martin Associates, 1973. 133 p.
- Oury, Guy-Marie. *Marie de l'Incarnation, 1599-1672*. Québec, Presses de l'Université Laval; Sablé-sur-Sarthe, France, Abbaye Saint-Pierre de Solesmes, 1973. 607 p.
- Pearson, Lester B. *Mike: memoirs, volume 2, 1948-1957*. Toronto, University of Toronto Press, 1973. 344 p.
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Appendix 7

Government information services

Information Canada was established in April 1970 to act as a central source of public information on federal government policies, programs and services; to co-ordinate federal information programs involving more than one portfolio and to initiate special programs where the public need is clear but the responsibility does not fall under the jurisdiction of any one portfolio; to provide professional resource assistance to help other federal agencies improve the quality and effectiveness of their information work; and to market and distribute federal publications.

The agency now has 11 inquiry centres across Canada, one in a major city in every province, in addition to the national centre in Ottawa. Information Canada also makes special efforts to reach citizens beyond large urban areas by using mobile information officers and by establishing communication networks with community information centres and libraries. Some of these centres have already been linked to the nearest Information Canada inquiry centre via telephone and telex and have access to a complete bank of federal information.

Hundreds of government publications are available through Information Canada's six bookstores, through central and regional mail order service, and through any of Information Canada's "authorized agents", commercial booksellers authorized to carry government material. Information Canada has over 90 such agents, and estimates that there will be 200 by 1975-76.

Information Canada Expositions designs and mounts domestic and international exhibits on behalf of client federal departments. It is also responsible for co-ordinating the federal presence at exhibits where several departments are participating. To fulfil this responsibility, Expositions is experimenting with the new "Umbrella Concept", as developed for the "Salute to Aviation" exhibit in Calgary and Toronto.

The Photothèque, also part of Audio-Visual/Expositions, has a library of over 300,000 photographs on Canadian subjects and offers a photographic advisory service to assist other government departments. It also arranges to cover photographic assignments for departments upon request.

Federal government information services are not centralized in Information Canada but act independently. They are at the service of the public to answer inquiries about their specific responsibilities, while Information Canada acts as a central contact point.

Statistics Canada, established in 1918 as the Dominion Bureau of Statistics, is Canada's central statistical agency and the country's main collector and publisher of information about Canadian economic and social life. The agency, given its present name in 1971, has been a separate department of government since 1965 and reports to Parliament through the Minister of Industry, Trade and Commerce.

One of Statistics Canada's key jobs is conducting the Census of Canada at five- and ten-year intervals; the latest ten-year census was in 1971 and the next five-year census will be in 1976. The bureau also undertakes a comprehensive Census of Agriculture at the same time as the general census and regularly surveys the social and economic change under more than 20 broad subject-matter headings such as the monthly labour force and consumer prices surveys.

The growth of Statistics Canada, both in personnel and in the complexity of statistical activity, has paralleled Canada's development as a modern industrial state. The agency's staff, which includes the largest single body of social scientists in one organization in Canada, has more than doubled in the past 16 years to about 5,500 in 1974. Several hundred additional persons are employed part-time on such projects as special surveys and censuses.

Statistical collection by the bureau covers every area of Canada and ranges from national assessments such as the national accounts to census detail. The information produced describes quantitatively Canada's economic and social environment and is used as an aid to decision-making and research. The public sector uses the information for the development of social and economic policies and the private sector for decisions in marketing and the establishment of branch plants and retail outlets.

Most Statistics Canada information is made available to the public through publications but for users requiring information in a more sophisticated form there is an increasing output on micro-film, computer tapes and special tabulations. At the most recent count, more than 2,500 publications were issued. Of these, some appear monthly or more frequently, some quarterly, some annually, and others every two or three years. The publications flowing from the national censuses include 278 for 1961, 122 for 1966 and more than 300 based on the 1971 Census. Some general publications are issued occasionally and include special studies and manuals. Statistical reports are published in English and French. About 1.3 million copies of Statistics Canada publications are issued yearly on a subscription basis.

The publications program includes statistical information from each subject area most commonly used. Special tabulations are issued in response to requests for more detail.

In addition to the publications program, there is considerable distribution of statistical information through newspapers, magazines, trade journals, trade associations, radio and television broadcasts. Much of Statistics Canada material is used in a wide range of reference publications such as year books and

encyclopedias and is incorporated into research studies, books, learned journals and in a great variety of other public and private documents.

Geocoding, known formally as the Geographically Referenced Data Storage and Retrieval System (GRDSR), is one example of the sophisticated tools the bureau uses for processing data and providing statistical information. Through GRDSR, certain statistical information from the census can now be quickly and inexpensively obtained about small areas in major cities.

Another example of Statistics Canada's capability for the storage and speedy processing of information is the Canadian Socio-economic Information Management System (CANSIM). CANSIM stores and updates hundreds of series of information on such topics as prices, industrial production, trade, and national accounts. Most series cover statistics for several years. Information tailored to user requirements is provided on computer tapes or in table form.

The principal vehicle for informing the public about the bureau's output is the free catalogue of publications, issued annually. It can be obtained by writing to Publications Distribution, Statistics Canada, Ottawa K1A 0T6. The catalogue lists and describes all publications, grouped by subject areas. An index lists several thousand entries arranged in alphabetical order and cross-referenced where necessary to show several publications in which information on a given subject may be found.

Statistics Canada publications may be obtained from the bureau headquarters, by using the order form supplied with the catalogue, and through regional offices at St. John's, Halifax, Montreal, Ottawa, Toronto, Winnipeg, Regina, Edmonton, and Vancouver. Frequently-used publications are stocked in Information Canada bookstores in principal cities. Major public and university libraries, provincial libraries and the National Library at Ottawa have Statistics Canada publications available for reference and the Statistics Canada library in Ottawa has all publications issued since the bureau was established.

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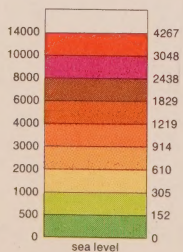
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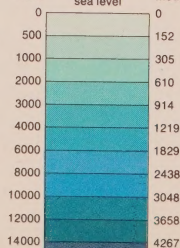
Metres



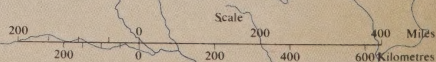
Feet

sea level

Metres



Lake depths are shown in reference to lake level rather than sea level.



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